SELF-ORGANIZED CRITICALITY AND POVERTY TRAPS

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Poverty traps have been implicated in the persistence of poverty throughout sub-Saharan Africa (Sachs et al., 2004) and South Asia (UNCTAD, 2002). The theory of poverty traps postulates a stable equilibrium, reinforcing the state of poverty. However, one of the most conspicuous features of poverty is the endemic instability of peoples' lives, their institutions, and the economic needs of their society.

Complex systems theory provides a growing collection of tools to understand this kind of persistent instability. One model that has the potential to revolutionize our models of and intuition of poverty traps is self-organized criticality (SOC). In the past two decades, SOC research has generated considerable interest, in fields ranging from physics to finance. This paper applies the concept of SOC to poverty traps, and identifies some under-explored potential that SOC has for informing research on sustainable development in general.

1. Self-Organized Critical Systems

Self-organized criticality is a kind of emergent behavior found in a wide range of complex, spacial, and historical systems.[1] These systems exhibit a kind of critical state between chaos and order, in which small changes can escalate to any size. Bak (1990) argues that

> large temporal fluctuations, and [fractal] spatial self-similarity are two sides of the same coin: "self-organized criticality". The idea is that [many] systems operate persistently way out of equilibrium at or near a threshold of instability. The systems evolve automatically to this critical state without any fine-tuning of external fields; hence the criticality is self-organized.

[1]Emergence in a complex system describes the process by which "properties of the [system] at large spatial scales result from feedback interactions between components occurring at smaller scales" (van de Koppel et al., 2005).

Although the mechanisms and structures that underly SOC are still unclear, most SOC systems exhibit a collection of interrelated characteristics. First, they rely on distributions in space or networks of connections, so their dynamics cannot be fully described with analytical expressions. Furthermore, the full state of the system is able to "build up" in time, historically and heterogeneously (Barabási and Albert, 1999). As it builds, driven by some characteristic, the system approaches a critical limit, beyond which it becomes locally and globally unstable. Instability leads to local collapses, which can avalanche by destabilizing nearby regions. The distribution of the sizes of avalanches follow a power law, which suggests that there is no "normal" size of avalanches.[2] As a result of this ongoing build-and-collapse dynamic, the system maintains an emergent critical state. If the system is spacial, the critical state is characterized by fractal-shaped patches of order and disorder (Bak, 1990). If the system is on a network, the network shows the small world property and "hierarchical modularity", in which a few nodes play large roles (Watts and Strogatz, 1998, Ravasz et al., 2002). In either case, the system exhibits heterogenous, scale-independent features both in time and space.

The classic sand pile example, developed by Bak (1990), remains among the most intuitive.[3] In this computational model, grains of sand fall on a plane, forming a pile. Sometimes, a grain of sand falls on an unstable region of the pile's slope, causing an avalanche. A graph of the number of avalanches versus their size, measured in sand grains, conforms to a power law: for every doubling of avalanche size, the number of avalanches decreases by a consistent factor (see figure 1, a). This is a self-similar relationship, suggesting that the avalanches have no natural size and little predictability. The continuous build-up and avalanching process naturally organizes the pile into a critical state, where the next sand grain could produce an avalanche of any size. Furthermore, graphs of the stable and unstable regions of the pile have fractal properties, implying that there is no natural size to these spacial structures (see figure 1, b).

[2]A power law (or scaling or Pareto) probability distribution has $P(x) \propto x^{-\alpha}$. Power law distributions are said to have fat tails, and do not have a well defined mean or standard deviation.
[3]For other accessible examples, see Bak (1996) and Buchanan (2001).

Table 1: Some classic, ecological, and economic SOC studies, and the characteristics that they have identified. SOC systems are identified by a distributed and historical medium, a driving force which causes the system to self-organize, a critical variable which attains a value at the edge of instability, and a kind of collapse which can escalate into an avalanche. As a result of this dynamic, a variety of scale-independent and self-similar properties emerge; some authors begin by identifying these properties; others start with models of the process. Table cells are left blank where authors do not discuss those elements. Turcotte and Rundle (2002) also lists many examples.

System	Medium	Driving Frc.	Critical Var.	Collapse	Scale-Independence	Reference
			Classic Examples			
sand piles	plane	sand drops	pile slope	avalanche	avalanche size	Bak (1990)
earthquakes	plane	tectonics	rock tension	earthquake	earthquake magnitude	Olami et al. (1992)
war	globe			conflict	casualties	Buchanan (2001)
academic papers	network				references	Buchanan (2001)
			Ecological Studies			
forest fires	plane	tree growth	density	forest fire	area burned	Malamud et al. (1998)
species abundance					individuals per km^2	Peters (1986)
ecosystem variation	space	competition			variations by size	Jørgensen et al. (1998)
metabolic pathways	network	evolution			hierarchical mod.	Ravasz et al. (2002)
evolution	ecosystem	evolution		extinctions		Fernandez et al. (1995), Leroi (2000)
river braiding	plane	hydrology			spacial patterns	Sapozhnikov and Foufoula-Georgiou (1999)
			Economic Systems			
markets	line	competition		failures	fluctuation size	Stauffer and Sornette (1999)
markets	time	interaction		price changes	fluctuations	Lux et al. (1999), Plerou et al. (1999)
trading	cells				sales volume	Moss (2002)
retail	plane	consumers			company size	Nagel et al. (2000)
companies	USA				growth	Stanley et al. (1996)
economy	network	demands		exhaustion	supply changes	Bak (1996)

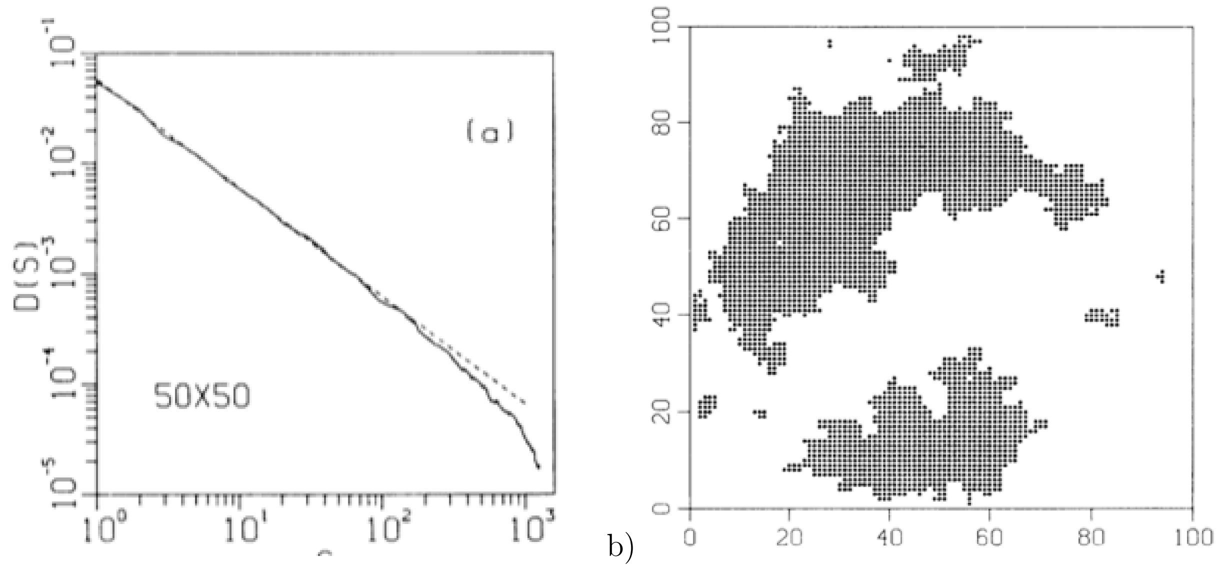

Figure 1. Example power law relationship and fractal clusters for the sand pile model, from Bak et al. (1987). The power law in (a) applies to the sizes of clusters, such as the ones in (b), which denote the shifts produced by sand grains.

Models of self-organized criticality have been proposed for earthquakes, forest fires, market fluctuations, human conflicts, and many other systems (see table 1). If SOC is common, it suggests a greater role in the dynamics of systems for history, endogenous structure, and local events, and has implications for the nature and predictability of catastrophic changes. As a tool for researchers, its main advantages include its departure from conventional (analytic or system dynamic) models, and the wide applicability of its results.

Economies and ecosystems are perfect candidates for SOC, because of their spacial complexity and nonlinearity, and their intense adaptive forces and competitive limits. Typical of SOC systems, many social systems exhibit the small-world property, scale-free behavior, and hierarchical modularity (Watts and Strogatz, 1998). Self-similarity is also characteristic of human systems: many of the same principles and behaviors apply at many different scales–globally, nationally, within an metropolitan region, and within a single institution (Holling, 2001).[4] Society is rife with likely SOC systems, and examples have been studied in finance, disasters, and social networks (Buchanan, 2001, Turcotte and Rundle, 2002). Direct evidence

[4]Holling (2001) claims that the panarchy conceit is reflected across many scales of space and time, as well as levels of social hierarchy (social, interorganizational, organizational, and political).

of self-organized states has been identified in human-impacted vegetation patterns (Barbier et al., 2006), academic paper references (Barabási and Albert, 1999), market prices (Cootner, 1964), political popularity (Byers, 1991), and war and international conflict (Conybeare, 1990). Jørgensen et al. (1998) suggests that "ecosystems strive towards moving as much as possible from thermodynamic equilibrium," placing them in the out-of-equilibrium domain of self-organized criticality.

Economies are evolutionary: they are path dependent, can achieve multiple equilibria, are often inefficient, and have a potential for lock-in (rich-get-richer dynamics) (Arthur, 1988). Combined with intense adaptive forces, this places economies in the realm of SOC. This suggests that despite the potential for single people in positions of power or external influences to shape regions, many important characteristics are strongly endogenous to the process, but nonetheless are unpredictable.[5]

Jørgensen et al. (1998) lays out three fundamental relations that together form a strong argument for the self-organized criticality of ecosystems as a whole: (a) body size and abundance follow Zipf's law, (b) the size of changes shows $1/f$ noise, and (c) the frequencies of "avalanches" follows a power law. The corresponding issues have been investigated for economic systems: (a) city size and abundance follow Zipf's law (Eeckhout, 2004), (b) price fluctuations show $1/f$ noise (Plerou et al., 1999), and (c) collapses follow a power law (Brunk, 2002b).

However, these SOC characteristics are not uniform across countries. The shape of the power law for the sizes of cities or agglomerations differs between countries (Soo, 2005). Mulianta et al. (2004) finds a power law signature in the populations of Indonesia's *kabupaten* (administrative regions) but does find one amongst *kotamadya* (municipalities). Price fluctuations in developing countries do not show the same kind of scale-independence characteristics of developed economies (Matia et al., 2004).

[5]This kind of dense endogeneity has been explored by the literature on social embeddedness (Granovetter, 1985, Edmonds, 1999, e.g.), which argues that the decisions of economic actors are only comprehensible in relation to the self-organized social matrix in which they are embedded.

Despite this work, there appear to be plenty of opportunities to integrate the insights from self-organized criticality more deeply into economic studies. Theoretical work has focused on simplified agent modeling, while empirical studies seem satisfied to identify power laws. In particular, additional research is warranted on scale-independence in economies; the community-wide relationships suggested by SOC; and the use of SOC metrics to gauge economic development warrant additional research.

2. Contributions to Sustainable Development

Scale refers to both the spaciotemporal extent and resolution used in an analysis (Wiens, 1989).[6] The role of spacial and temporal scale has been a growing concern in empirical systems research. For example, the tacit scales of study for the World Bank are the country and the year. However, if these scales do not correspond to the scale of the driving processes, this choice can easily fall into a region of low predictive potential or of psuedopredictability (if the natural scale is much greater than the scale of observation) (Wiens, 1989). Many natural systems, such as marine ecosystems, have strong scale dependence, where "variables such as abundance and diversity often behave unpredictably at one level of resolution but produce predictable patterns at another" (Aronson, 1992).

Scales of operation are similarly challenging, particularly for traditional international development. Monolithic institutions and industries are favored, not only for the ease of working with them, but for their efficiency and potential to raise large numbers of people out of poverty. However, such large institutions have endemic problems beyond their propensity for corruption: their focus on aggregate measures can fail to address the lower-level cause of

[6]Scale and scaling are very different ideas (however, as this section shows, scale and scaling are not in conflict, although they refer to opposite relations). Scaling, in physics-influenced contexts, refers to the dominance of a $f(s) = s^\alpha$ relationship, which corresponds to the absence of dominance of any one particular scale. Barenblatt (2003) explains,

> Such relations often appear in the mathematical modeling of various phenomena, not only in physics but also in biology, economics, and engineering. However, scaling laws are not merely some particularly simple cases of more general relations. They are of special and exceptional importance; scaling never appears by accident. Scaling laws always reveal an important property of the phenomenon under consideration: its *self-similarity*.

those emergent problems. Fractal niches and institutional diversity, at all levels of scale, is also a key component of a healthy economy (Becker and Ostrom, 1995).

The tools of self-organized criticality hold a number of contributions to the study and practice of sustainable development. Much of the research on SOC in the social sciences has focused on a key fingerprint: the distribution of noise. Where unpredictable shocks are distributed according to a power law (as opposed to, say, white noise), it is taken to be strong evidence that these shocks are endogenous and reflect a self-organized critical state of the system. In many studies, the power law is taken to be the arbiter of self-organization: where it is absent, SOC is claimed to not apply, and where it acts, its characterization is often taken to be the complete story.

One contribution self-organized criticality models have that is missing from the economic literature is the new relationships that it formally defines. Some of the most sophisticated prevailing models of economies have a kind of "agent bias", which focuses on the capacities of individuals and institutions, and claims that the effects of a classes of agents are identical to the aggregate effects of its individuals. However, in the coupled system surrounding an economy and its environment, the local, self-organized actions of many individuals and institutions can have emergently different effects from the actions of their constituents, acting in non-local ways. These new relationships, for complex systems in general, include (a) self-organization support, (b) critical value support, (c) collapse facilitation, and (d) critical competition (Rising, 2011). For example, the periodic vegetation patterns in semi-arid regions are endogenous (self-organized, rather than a result of soil or property patterns) (Barbier et al., 2006). However, the combined effects of drought and human impacts on vegetation patterns have a significantly larger impact than drought alone. Other environmental preconditions on growth could be similarly endogenous to the coupled human-natural system.

SOC can also inform our understanding of resilience and conservation. Rising (2011) describes a variety of ways in which the health of an ecosystem (and by extension, a human society) is reflected in the extent and depth of its self-organized criticality. According to the SOC research, unpredictable events with huge impacts are inevitable. However, they are simultaneously a common characteristic of resilient systems.

The role of SOC in sustainable development may often have been misinterpreted as the results of unpredictable noise. Brunk (2002a) notes

> The noise spikes in SOC systems are called flicker noise, but are actual events, rather than 'measurement errors.' Here, usually insignificant events sometimes cause complexity cascades that propagate within a system to produce very large 'noise' spikes that appear to us as unexpected events. These cascades are situations where an initially small, and perhaps insignificant-seeming action generates a macro-level event, such as a currency collapse, war, market bubble, riot, bank run, electoral landslide, or a government collapse.

The research on self-organized criticality suggests that a wide range of heterogeneity and noise is actually endogenous to the system. If countries follow a power law of growth rates, as companies do, it suggests that organizational features may be stronger determinants of growth than "production-related influences such as investment in physical capital and in research and development" (Stanley et al., 1996).

There exists a tantalizing possibility that, like the Heisenberg uncertainty principle, SOC dynamics have everything to do with how we define the system and our information about it (Sawhill, 1995). Human systems appear to maximize their thermodynamic distance from equilibrium, which is equivalent to maximizing their missing information. This is likely to be equally true of developed and developing economies, but the kinds of missing information differ.

3. Self-Organization in Poverty Traps

SOC could play many different roles in the persistent or alleviation of poverty traps. It may cause them, or its under-development may cause them, or both. Studies of SOC ecosystems show that diversity can be either a benefit or a detriment to stability, depending on the scale of the diversity (Solé et al., 2002). Too little or too much diversity increases the probability of instability. Many complex systems organize on the edge of chaos (Solé et al., 2002), and this can be an important strength, contributing to the resilience of the system. Do poverty traps represent a overabundance of instability, or a undersupply of it?

SOC dynamics can contribute to the existence of poverty traps in two major ways: as an efficient cause and as a formal cause. The efficient cause of poverty through SOC dynamics is unpredictability and the ubiquity of collapse dynamics. In the presence of environmental unpredictability, tit-for-tat relationships are favored (Perry, 1995), undermining cooperation. Social stability and organization are two of the most important predictors for developmental success.

The formal cause of SOC-driven poverty traps lies in the nature of development itself. Brunk (2002a) identifies two features which result in self-organized criticality in the social sciences: a trend toward the interconnectedness of institutions, and a kind of event that disrupts this process. In some models, such as the sandpile model, the same force causes both increasing complexity and collapse. In others, like the classic forest fire model (Malamud et al., 1998), these two are disconnected but combine to create a critical state. For poverty traps, it may be exactly the process of development which drives this societal trend toward greater sensitivity.

An implicit assumption exists that the process that causes development to fail is external to the process of development itself. However, SOC undermines that: many kinds of collapse are endogenous to their system. SOC dynamics have been identified in many of the idiosyncratic events that characterize poverty traps, such as riot and strike growth (Bohstedt and Williams, 1988, Midlarsky, 1978) and urban collapse (Brunk, 2002b, Tainter, 1990).

Jørgensen et al. (1998)'s description of ecosystems could as easily have been applied to economies, that they

> attempt to utilize the available resources at the optimum which implies– as shown in Jørgensen (1995) by modelling studies– that a further increase of one of the growth rates for one of the organisms included in the model, will cause a chaotic behaviour and a decrease in the over-all utilization rate.

This represents a new kind of poverty trap, driven by criticality.[7] For the SOC trap, normal development aid only increases the rate of collapses.

Many signatures of self-organized criticality appear to be robust to a wide range of parameter values. For example, this is true of the fractal spacial distributions of processes characterized by growth and inhibition in space, like distaster-recovery dynamics (Pascual et al., 2002). This suggests that its impact on poverty traps cannot be resolved by simple adjustment policy changes, and requires changes in the underlying structure of the system Meadows (1997).

Mulianta et al. (2004) suggests that the power law itself may be socially unacceptable in some circumstances. A Pareto income distribution leave the majority of the economy in poverty. The Gaussian distribution may be a better indication of convergent development, and represent less economic inequality.

However, the cultivation of SOC dynamics can also prove a escape from poverty traps, just as healthy ecosystems show the strongest signal of self-organized criticality.

Poverty traps may reflect the role of sinks in otherwise SOC systems. In the presence of a sink, scale-independent properties do not extend to all scales (Keitt et al., 1997), which has particular relevance to societies in ecological constrained areas. Below a characteristic size, the power law results hold. Above it, however, system structures are determined by

[7]Theoretically, the poverty trap is an attractor in a chaotic system. Costanza et al. (1993) divides all attractors in systems as either point attractors (stable), periodic attractors, noisy attractors, or chaotic attractors (with fractal phase plots).

environmental gradients. In other words, for normal SOC systems, "pattern is a function of process" (Solé and Manrubia, 1995, Milne, 1998)– a coupled economic and environmental process– but when the system is dissipative, environment overwhelms economy.

Solé et al. (2002) introduces the concept of "self-organized instability" to describe systems which are unable to relax into their natural state on the boundary of chaos before a new disturbance appears. It may be that the natural criticality of impoverished economies is persistently undermined by external events, resulting in an unambiguously destructive dynamic.

One way to understand this complexity is that the economy and environment represent a coupled system, which has both self-organized and exogenous components. The exogenous components– stationary aspects of the environment that have a large impact on the dynamics of the system– represent external constraints, and two natural responses are modification of the constraint (e.g., investment in groundwater extraction or pipelines) and adaptation to it (e.g., investment in industry with low water needs). Within the context of SOC, however, a third option may be available: "incorporation", that is, modification of the SOC system so that it includes the environment (e.g., by taxing water usage to bring it into the economic system).

The SOC elements have their own problems: their propensity for collapse, and their fat tail (power law) distributions. Where collapse is a problem or the distributions are considered unacceptable, an attempt can be made to remove the self-organized nature of the system (e.g., by removing these elements from the market).

Stability in an SOC system represents the point at which self-organizing forces balance disorganizing forces. Stability on some axes underlies poverty traps, while stability on other axes is essential for development. Gallopin (1989) argues,

> The focus must necessarily shift from the static concept of poverty to the dynamic processes of impoverishment and sustainable development within the context of permanent change. The dimensions of poverty cannot any

longer be reduced to only the economic or material conditions of living; the capacity to respond to changes, and the vulnerability of the social groups and ecological systems to change become central.

4. A Model of Poverty Traps

Many SOC models take place on a grid. In the conceptual world of human organizations, the model of network connections may make more sense.[8] Poverty, within this model, might be considered a dearth of connections, or the illness of a central (high-connectivity) node.

The model of poverty traps used here begins with a basic Solow growth model, with exogenous population growth, no technological growth, Cobb-Douglas production, and random shocks:

$$\frac{dL}{dt} = \lambda L(t)$$

$$Y(t) = K(t)^{\alpha} L(t)^{1-\alpha} \epsilon(t)$$

$$\frac{dK}{dt} = sY(t) - \delta K(t)$$

This provides a baseline for the distributed model, which has the potential to exhibit SOC. The purpose of the distributed model is to incorporate discrete, distributed dynamics over a graph of firms while holding true to the Solow relations.[10]

The distributed model is developed on a circular graph of firms. Each firm has an individual capital stock, and an even fraction of the economy's labor. Every firm is modeled with a Cobb-Douglas production function.

The growth dynamics are a distributed version of Solow growth. Capital growth is divided into two terms: $g[t] = sY[t]$ is the growth term, and $d[t] = \delta K[t]$ is decay. As long as

[8]One way to construct a scale-free network is by continuously adding vertices connected preferentially to vertices with more connections– for example, by connecting to vertex j with probability $\Pi(k_j) = k_j / \sum_j k_j$, where k_j is the number of existing edges. Networks of this sort have properties shared by many large social structures, such as the WWW and paper citations, including scale-free structures and the small-world phenomenon (Barabási and Albert, 1999).[9]

[10]London and Tohm (2008) presents a model of poverty traps within a framework of self-organized criticality. However, their model does not engage with common economic growth models.

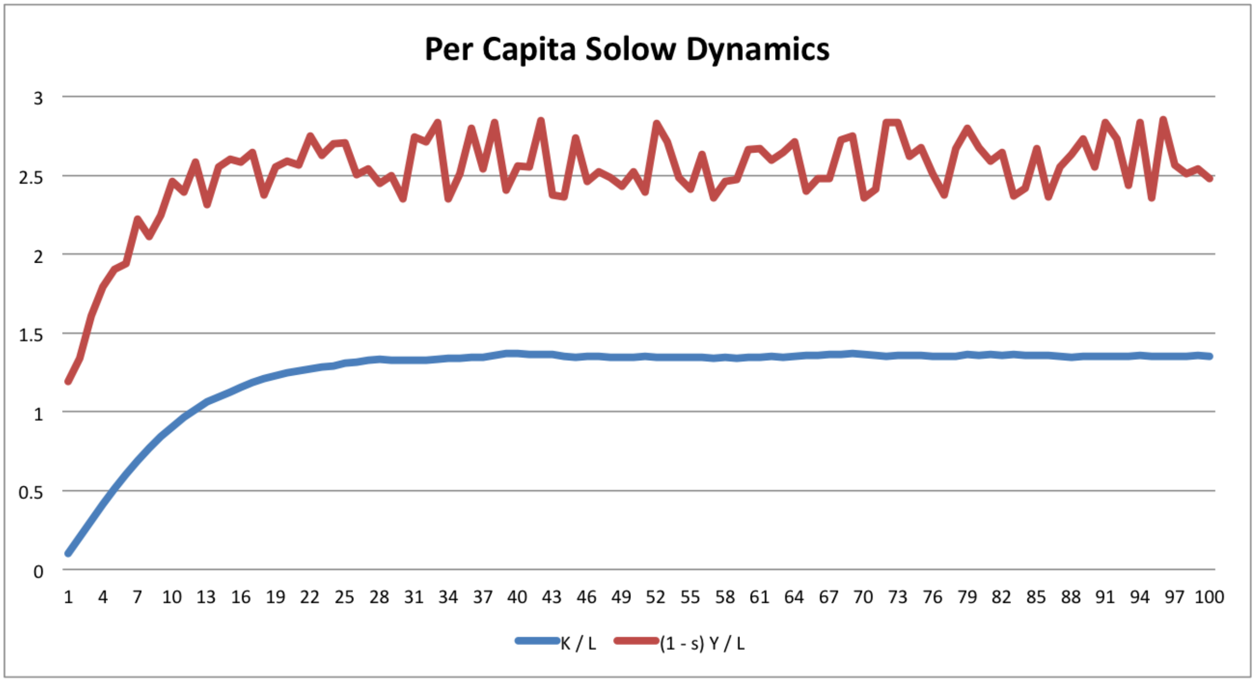

FIGURE 2. Sample run of the basic Solow model.

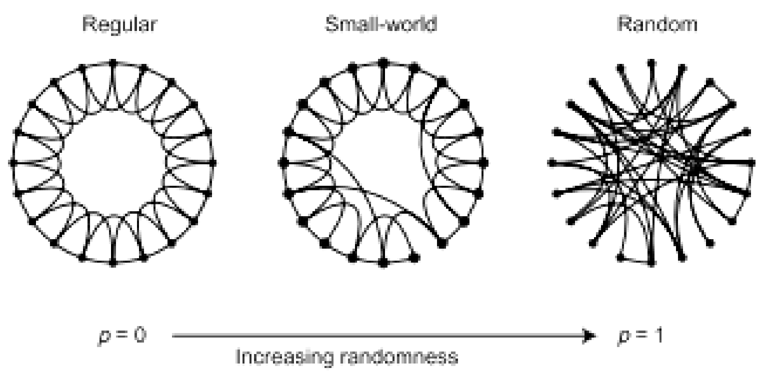

FIGURE 3. Diagram of a N=2, K=4 circle graph, with some edges changed randomly to produce small-world properties. Reproduced from Watts and Strogatz (1998).

$g[t] \geq d[t]$, the entire extent of the growth applies– that is, $K[t+1] = K[t]+g[t]$. Eventually, $g[t] < d[t]$, at which point growth stalls: $K[t+1] = K[t]$, and a probability of collapse every time step ensues. The probability of a collapse is such that the expected capital follows the Solow curve:

$$K[t+1] = K[t] + g[t] - d[t] = (1 - P(c))K[t] \implies P(c) = (d[t] - g[t])/K[t]$$

Each time step, a small fraction of nodes get random connections to other nodes. This serves several purposes. First, it enters the equations as a kind of technology– in this case, specialization technology, which raises productivity by integrating an economy, as in Smithian growth (Kelly, 1997). Second, it decreases the characteristic path length of the entire network, inching it closer to the small-world network typical of real economic systems, in a pattern similar to the one used by Watts and Strogatz (1998). Third, by increasing connectivity, it provides more pathways along which collapses can propagate.

When a firm collapses, its capital is set to 0 and its connections to other firms are removed. This lowers the productive potential of those neighboring firms, which can destabilize them resulting in an avalanche. The resulting boom-and-bust dynamic, characterized by low consumption punctuated with great periods of growth, results naturally in the modified model (see figure **??**).

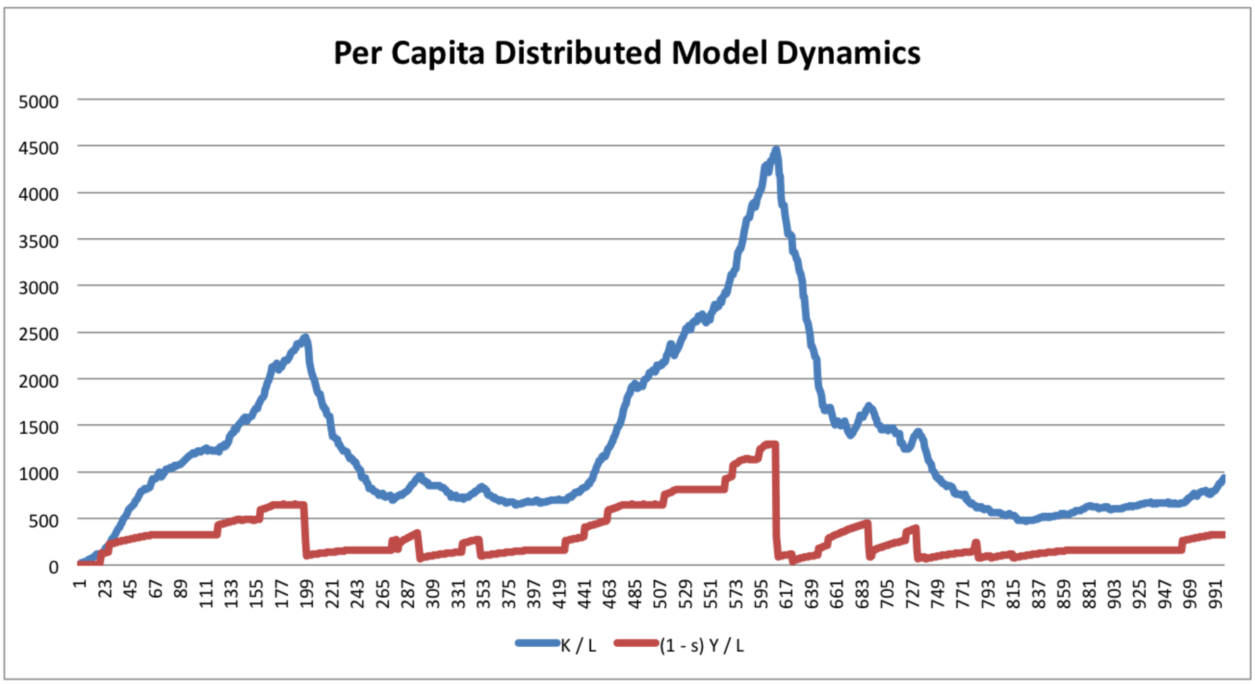

FIGURE 4. Example run of the Distributed Model. Boom and bust dynamics immediately result from the existence of connections between firms.

As predicted by Kelly (1997), growth booms at a critical value of integration. There is also a critical value of integration which causes global instability. This suggests that there are three dynamics within an SOC-Smithian system.

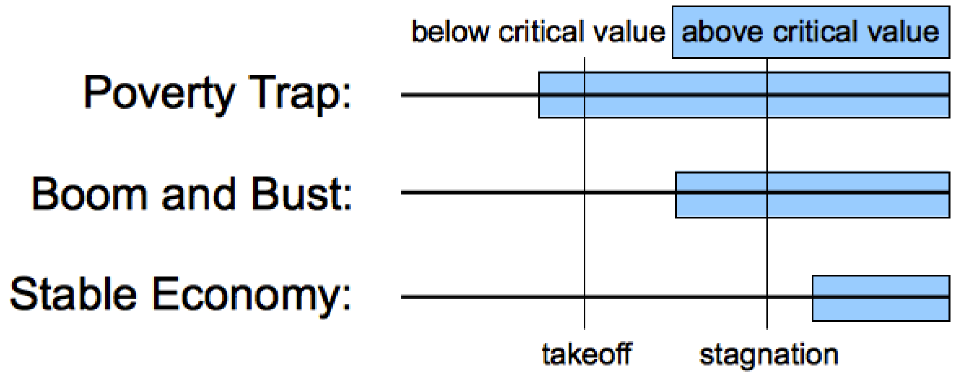

Figure 5. Three possible economy dynamics in the SOC-Smithian system.

Poverty Trap: : The critical SOC integration is below the takeoff integration. Takeoffs cannot occur, and collapses conform to a power law.

Boom and Bust: : The critical SOC integration is above the takeoff integration, so the normal state of this economy will oscillate between accelerating growth and harsh collapses.

Stable Economy: : The critical SOC integration is above the stagnation integration. Large collapses will be rarer than the power law expectation, and the economy quickly returns to a steady path.

5. Gibrat/Zipf's Laws for Development

City sizes are known to follow a power law, but the coefficients of that power law vary by country. This section is a brief investigation, using data from Soo (2005) and GapMinder, of the variation associated with development.

According to theory, city sizes follow a power law of exponent equal to 1. Soo (2005) finds that the exponent is significantly different from 1 for most countries. We find that, furthermore, that coefficient varies systemically with country development (as proxied by the HDI). Greater economic development corresponds to a higher power law coefficient, as show in figure 6.

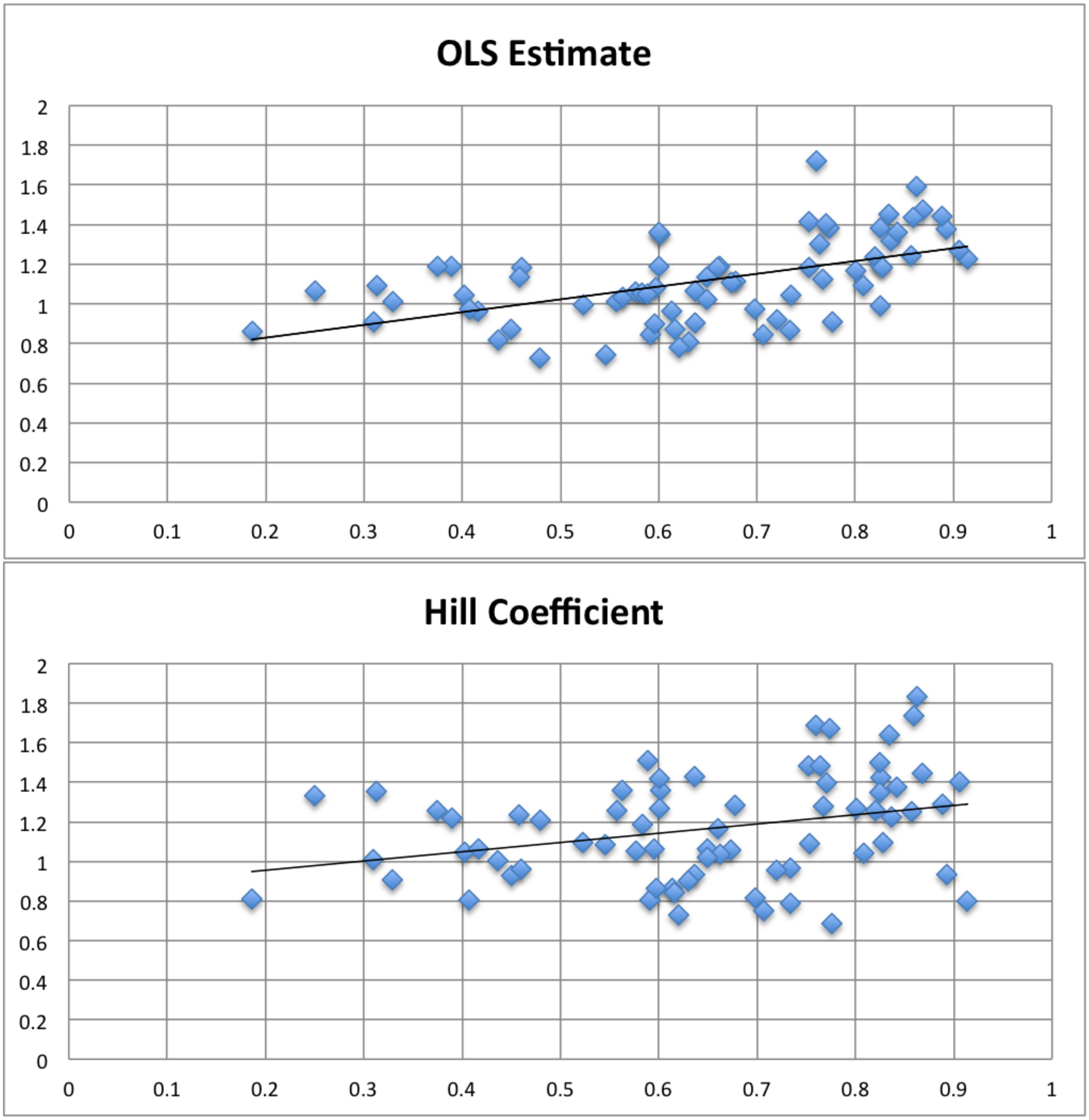

FIGURE 6. Power coefficients for city sizes, by country, versus Human Development Index. There is a clear trend toward a steeper power law for developed countries. Zipf Coefficients from Soo (2005). HDI data from GapMinder.

Soo (2005) does not provide goodness-of-fit data, but includes "concavity coefficients" in one OLS regression which can be a proxy for the fit. The trend in figure 7 may reflect outliers, but suggests a decline toward zero (perfect self-organized scaling) with development.

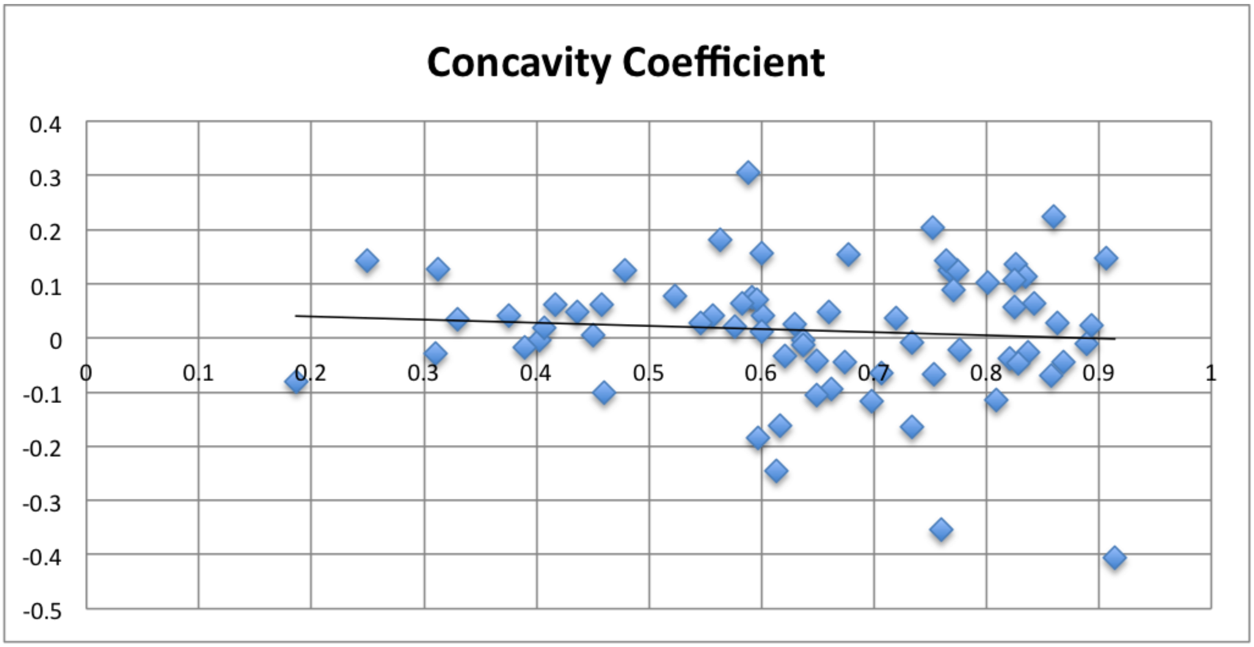

Figure 7. Concavity coefficients for city sizes, by country, versus Human Development Index. The trend line suggests that developed countries (high HDI) have on average a lower concavity and so conform more closely to a power law. However, they also have a wider range of concavities. Concavity coefficients from Soo (2005). HDI data from GapMinder.

A more in-depth investigation could involve studying the (potential) fractal dimension of cities, as exhibited by their night light data, although this could be confounded by regional laws.

6. Analysis of Indicators

As an extension of the Gibrat law investigation, it is important to determine which indicators display SOC characteristics within a poverty trap, and which display SOC in developed settings. To do so, I collected the 497 indicators used by GapMinder, and performed the following analysis:

(1) Determine, for each country and indicator, the year-to-year differences, where ever two consecutive years were available. Figure 8 shows all available the year differences for Peru, as an example of the data.

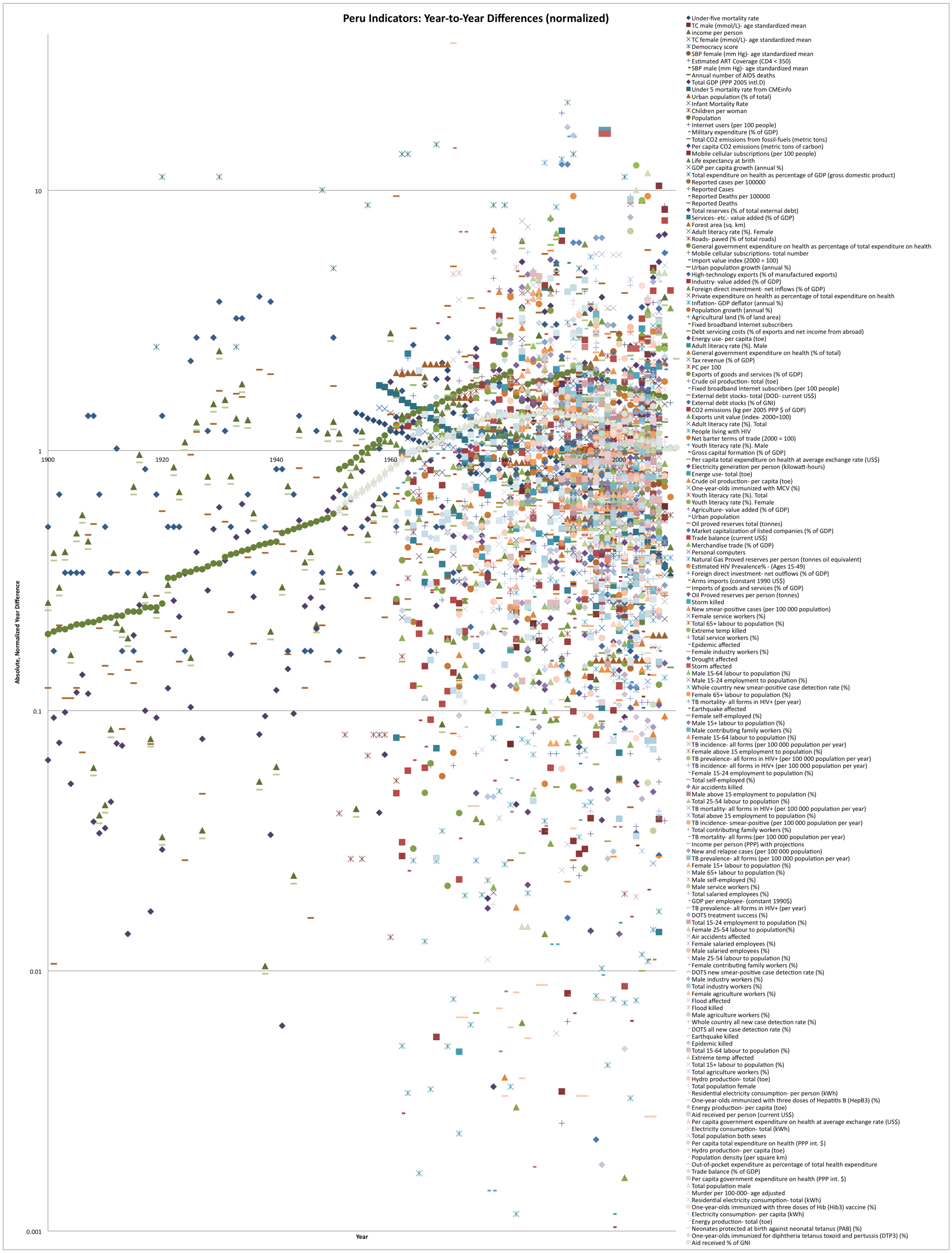

FIGURE 8. Absolute year-to-year differences in GapMinder indicators for Peru.

(2) Calculate an estimated Human Development Index for each country and year. Where measured HDI data is available, it was used; otherwise, the following estimate was used:

$$\hat{HDI} = \frac{GDP_0}{GDP_1} HDI_1$$

where GDP_0 is the per capita, PPP GDP in the desired year, and GDP_1 and HDI_1 are both measured in a year when HDI data is available If HDI data is available on either side of a year, a weighted sum of these estimates is used.

(3) For each indicator, and across all countries, identify those year-to-year differences which apply to a range of HDI values: .1 to .2, .2 to .3, etc.

(4) Calculate the probability density function for differences of each indicator and range of HDI values, using a commulative distribution function of the available points. Figure 9 shows an example PDF for CO_2 emissions of countries with HDIs between .5 and .6.

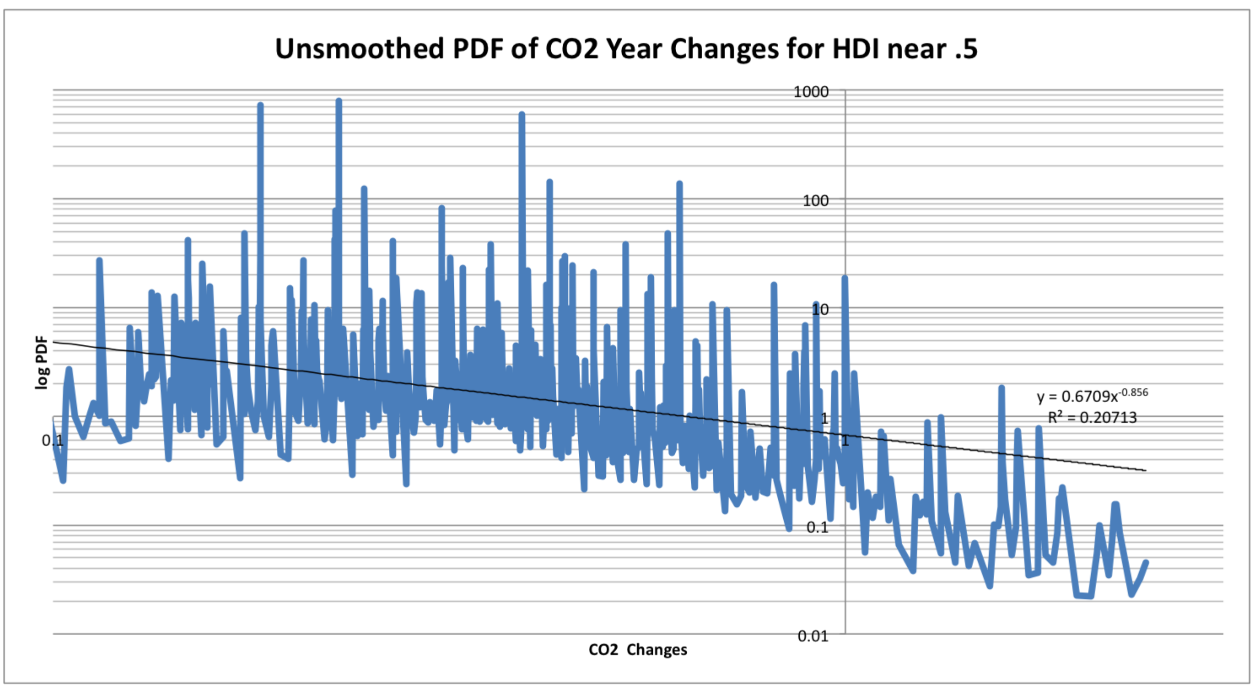

FIGURE 9. Calculated probability distribution function of year-to-year differences in CO_2 emissions for countries with a HDI between .5 and .6.

(5) Calculate a linear regression for each indicator and range of HDI values and the associated R^2.

The tables at the end of the paper show the results.

The R^2 values give an indication of how well the data points conform to the power law, across all countries within a range of HDI values. The colors below denote R^2 values, from low (red) to high (blue). Entries with two few data points are marked as "insufficient", and entries with invalid data points are marked as "unknown". The colors are also "washed out" if there are a low number of data points, for easy visual identification.

Row colors that vary in the following ways have a probably explanation:

Red-Orange Throughout: : This indicator never displays SOC characteristics, and this might reflect a fact of humanity. For example, "Urban population" changes.

Blue-Green Throughout: : This indicator always displays SOC characteristics, and this might reflect a fact of humanity. For example, changes in "Urban population (% of total)".

Blue-Green to Orange-Red: : This indicator shows SOC characteristics in poor countries. For example, "Hydro production- total (toe)" varies from an $R^2 = .4$ for low HDI to $R^2 = .1$ for high HDI.

Orange-Red to Blue-Green: : This is an indicator which attains a more natural SOC distribution in developed countries. For example, "15-49 yrs sex ratio" changes.

Blue-Green Color at End: : This often reflects a lack of data points at the high end relative to the other HDI bins (for example, "Aid received per person (current US$)")

7. Future Directions

There is considerable potential for self-organized criticality to explain and inform poverty dynamics. SOC suggests new approaches to the problems of scale, emergent relationships, resilience, endogeneity. It also provides a theoretical basis for new kinds of poverty traps (an absence of SOC dynamics and their overabundance) and an appropriate response to them (incorporation and exclusion). Finally, the distributed Solow-Smithian model presented here provides a description of the relationship between poverty trapped, boom-and-bust, and stable economies. By investigating the fine balance of which indicators show SOC dynamics at different levels of development, we can better diagnose and address a wide range of sustainable development issues.

Identifying the dynamics of isolated indicators, however, will not be sufficient to respond to endemic poverty problems. Further investigations need to consider the join SOC relationships between different economic elements. Information theory provides an approach to do that.

(Sawhill, 1995) notes the deep connection between entropy and critical systems, and how it is reflected in the mathematical model of missing information. In particular, entropy (missing information, MI) can be measured as

$$MI(P_1, \ldots, P_j) = -\sum_i P_i \log P_i$$

where P_i is the probability of state i. Ecological and human systems strive to maximize entropy, but there may be differences in the entropy signatures of developed and developing countries if poverty traps reflect societies that are butting against their critical state limits.

Using the indicators from GapMinder and the probability distributions determined above, future research can consider the entropy of these variables and their mutual information for any given country and as a function of development (that is, how many bits of information are needed to denote the entire state of a countries indicators around a point in time). Together, this analysis will expose the different ways that developed and impoverished countries expose information through indicators, reflecting the deep interconnectedness of the processes behind their dynamics.

Indicator	1	2	3	4	5	6	7	8	9
0-14 yrs sex ratio	0.13 (114)	0.23 (229)	0.22 (222)	0.26 (193)	0.20 (179)	0.26 (226)	0.33 (172)	0.29 (118)	0.29 (9)
0-4 years- number	0.34 (114)	0.35 (229)	0.25 (222)	0.30 (193)	0.33 (179)	0.28 (226)	0.41 (172)	0.30 (118)	0.39 (9)
10-14 years- number	0.35 (114)	0.35 (229)	0.36 (222)	0.28 (193)	0.33 (179)	0.26 (226)	0.41 (172)	0.36 (118)	0.35 (9)
15-19 years- number	0.33 (114)	0.35 (229)	0.38 (222)	0.32 (193)	0.35 (179)	0.36 (226)	0.35 (172)	0.34 (118)	0.42 (9)
15-24 yrs sex ratio	0.08 (114)	0.16 (229)	0.17 (222)	0.20 (193)	0.18 (179)	0.21 (226)	0.22 (172)	0.25 (118)	0.31 (9)
15-49 yrs sex ratio	0.10 (114)	0.11 (229)	0.15 (222)	0.15 (193)	0.15 (179)	0.17 (226)	0.17 (172)	0.19 (118)	0.41 (9)
2-wheeler- motorized- mortality per 100-000	Insufficient	Insufficient	Insufficient	0.57 (4)	0.23 (50)	0.21 (86)	0.28 (138)	0.43 (180)	0.42 (39)
20-39 years- number	0.20 (114)	0.26 (229)	0.23 (222)	0.21 (193)	0.22 (179)	0.19 (226)	0.25 (172)	0.19 (118)	0.31 (9)
40-59 years- number	0.31 (114)	0.32 (229)	0.31 (222)	0.29 (193)	0.29 (179)	0.25 (226)	0.30 (172)	0.23 (118)	0.19 (9)
5-9 years- number	0.27 (114)	0.36 (229)	0.27 (222)	0.21 (193)	0.30 (179)	0.21 (226)	0.43 (172)	0.27 (118)	0.46 (9)
50+ yrs sex ratio	0.15 (114)	0.13 (229)	0.11 (222)	0.10 (193)	0.12 (179)	0.08 (226)	0.15 (172)	0.29 (118)	0.58 (9)
Adult literacy rate (%). Female	0.28 (6)	0.09 (31)	0.43 (37)	0.13 (41)	0.19 (54)	0.06 (92)	0.16 (55)	0.11 (25)	0.43 (7)
Adult literacy rate (%). Male	0.91 (6)	0.31 (31)	0.05 (37)	0.09 (41)	0.22 (54)	0.21 (92)	0.07 (55)	0.16 (25)	0.26 (7)
Adult literacy rate (%). Total	0.81 (6)	0.14 (32)	0.21 (37)	0.04 (41)	0.12 (54)	0.26 (92)	0.07 (55)	0.55 (25)	0.30 (7)
Agricultural land (% of land area)	0.08 (206)	0.02 (687)	0.05 (780)	0.12 (711)	0.05 (769)	0.05 (789)	0.10 (630)	0.02 (363)	0.36 (49)
Agricultural water withdrawal as % of total water withdrawal (%)	0.81 (4)	0.17 (15)	0.27 (33)	0.43 (30)	0.60 (52)	0.44 (44)	0.45 (38)	0.19 (26)	Insufficient
Agriculture- value added (% of GDP)	0.01 (166)	0.01 (585)	0.02 (657)	0.01 (543)	0.01 (659)	0.02 (777)	0.09 (625)	0.16 (377)	0.16 (64)
Aid received % of GNI	0.38 (192)	0.54 (623)	0.58 (719)	0.57 (614)	0.48 (637)	0.30 (542)	0.44 (184)	0.41 (25)	Unknown
Aid received per person (current US$)	0.02 (214)	0.01 (675)	0.02 (755)	0.00 (638)	0.01 (658)	0.02 (547)	0.02 (184)	0.32 (26)	0.99 (3)
Air accidents affected	0.84 (82)	0.40 (266)	0.57 (445)	0.57 (446)	0.70 (601)	0.50 (655)	0.62 (526)	0.61 (330)	0.67 (56)
Air accidents killed	0.51 (82)	0.47 (266)	0.62 (445)	0.55 (446)	0.66 (601)	0.56 (655)	0.62 (526)	0.53 (330)	0.67 (56)
Annual number of AIDS deaths	0.30 (36)	0.35 (140)	0.10 (267)	0.09 (276)	0.05 (336)	0.05 (372)	0.08 (314)	0.10 (329)	0.26 (72)
Annual population growth rate (%)	0.31 (92)	0.34 (201)	0.41 (204)	0.34 (182)	0.32 (170)	0.31 (174)	0.34 (148)	0.27 (88)	0.29 (33)
Arms exports (constant 1990 US$)	0.70 (5)	0.47 (56)	0.24 (77)	0.28 (126)	0.21 (163)	0.29 (232)	0.32 (354)	0.34 (269)	0.46 (42)
Arms imports (constant 1990 US$)	0.28 (87)	0.17 (429)	0.24 (495)	0.29 (508)	0.31 (547)	0.35 (580)	0.44 (572)	0.55 (347)	0.53 (68)
Average age of billionaires	Unknown	Unknown	Unknown	0.72 (84)	0.53 (67)	0.15 (130)	0.43 (101)	0.33 (122)	0.33 (39)
Billionaires per million inhabitants	Unknown	Unknown	Unknown	0.99 (84)	0.26 (67)	0.40 (130)	0.12 (101)	0.04 (122)	0.09 (39)
Biomass stock in forest (ton)	Insufficient	0.86 (3)	0.73 (5)	0.64 (7)	0.87 (5)	0.35 (12)	0.28 (10)	0.43 (11)	Insufficient
Births attended by skilled health staff (% of total)	0.86 (4)	0.34 (33)	0.39 (71)	0.48 (74)	0.48 (105)	0.02 (140)	0.39 (95)	0.32 (53)	1.00 (4)
Breast female cases	Insufficient	0.20 (9)	0.28 (21)	0.46 (11)	0.45 (23)	0.14 (30)	0.50 (17)	0.21 (21)	Insufficient
Breast female deaths	Insufficient	0.51 (9)	0.51 (21)	0.51 (11)	0.27 (23)	0.20 (30)	0.59 (17)	0.39 (21)	Insufficient

Indicator	1	2	3	4	5	6	7	8	9
Breast Female Incidence	Insufficient	0.58 (13)	0.20 (50)	0.15 (39)	0.31 (51)	0.30 (71)	0.22 (122)	0.21 (75)	Insufficient
Breast Female Mortality	0.38 (20)	0.36 (127)	0.35 (217)	0.38 (270)	0.53 (336)	0.53 (493)	0.56 (504)	0.47 (226)	0.42 (10)
Car mortality per 100-000- age adjusted	Insufficient	0.65 (4)	0.89 (5)	0.09 (17)	0.15 (71)	0.13 (114)	0.28 (191)	0.24 (222)	0.21 (49)
Cervix female cases	Insufficient	0.16 (9)	0.15 (21)	0.22 (11)	0.18 (23)	0.30 (30)	0.39 (17)	0.18 (21)	Insufficient
Cervix female deaths	Insufficient	0.39 (9)	0.21 (21)	0.25 (11)	0.16 (23)	0.50 (30)	0.54 (17)	0.24 (21)	Insufficient
Cervix Female Incidence	Insufficient	0.63 (13)	0.25 (50)	0.25 (39)	0.30 (51)	0.25 (71)	0.40 (122)	0.38 (75)	Insufficient
Cervix Female Mortality	0.36 (20)	0.45 (127)	0.47 (217)	0.55 (268)	0.53 (334)	0.59 (489)	0.64 (502)	0.60 (226)	0.63 (10)
Children per woman	0.08 (932)	0.02 (1376)	0.25 (1179)	0.29 (872)	0.35 (829)	0.57 (874)	0.32 (712)	0.42 (403)	0.36 (78)
CO2 emissions (kg per 2005 PPP $ of GDP)	0.05 (69)	0.09 (269)	0.03 (372)	0.04 (369)	0.03 (546)	0.02 (621)	0.04 (575)	0.06 (336)	0.30 (20)
Colon & Rectum Female Mortality	0.58 (5)	0.32 (34)	0.38 (108)	0.37 (181)	0.55 (272)	0.58 (477)	0.55 (503)	0.49 (225)	0.15 (9)
Colon & Rectum Male Mortality	0.71 (5)	0.29 (34)	0.37 (108)	0.46 (181)	0.49 (272)	0.53 (477)	0.49 (503)	0.50 (225)	0.55 (9)
Colon&Rectum female cases	Insufficient	0.55 (9)	0.51 (21)	0.51 (11)	0.26 (23)	0.41 (30)	0.15 (17)	0.27 (21)	Insufficient
Colon&Rectum female deaths	Insufficient	0.36 (9)	0.32 (21)	0.53 (11)	0.32 (23)	0.22 (30)	0.16 (17)	0.33 (21)	Insufficient
Colon&Rectum Female Incidence	Insufficient	0.54 (13)	0.20 (50)	0.16 (39)	0.29 (51)	0.44 (71)	0.35 (122)	0.28 (75)	Insufficient
Colon&Rectum male cases	Insufficient	0.33 (9)	0.29 (21)	0.55 (11)	0.21 (23)	0.19 (30)	0.22 (17)	0.38 (21)	Insufficient
Colon&Rectum male deaths	Insufficient	0.68 (9)	0.50 (21)	0.45 (11)	0.28 (23)	0.51 (30)	0.19 (17)	0.39 (21)	Insufficient
Colon&Rectum Male Incidence	Insufficient	0.56 (13)	0.30 (50)	0.18 (39)	0.23 (51)	0.24 (71)	0.28 (122)	0.24 (75)	Insufficient
Contraceptive prevalence (% of women ages 15-49)	0.59 (8)	0.02 (46)	0.02 (93)	0.47 (94)	0.47 (136)	0.55 (116)	0.35 (63)	0.39 (22)	Insufficient
Cross sectors aid (% of total aid)	Insufficient	Insufficient	Insufficient	Insufficient	0.34 (8)	0.24 (52)	0.16 (237)	0.02 (266)	0.52 (34)
Crude birth rate (births per 1000 population)	0.18 (92)	0.11 (201)	0.10 (204)	0.11 (182)	0.10 (170)	0.11 (174)	0.18 (148)	0.22 (87)	0.51 (32)
Crude death rate (deaths per 1-000 population)	0.20 (92)	0.17 (201)	0.15 (204)	0.25 (182)	0.25 (170)	0.18 (174)	0.18 (148)	0.18 (87)	0.18 (32)
Crude oil production- per capita (toe)	0.68 (29)	0.05 (212)	0.06 (422)	0.01 (465)	0.04 (625)	0.00 (743)	0.01 (690)	0.05 (406)	0.03 (77)
Crude oil production- total (toe)	0.68 (29)	0.08 (212)	0.04 (422)	0.03 (465)	0.04 (625)	0.01 (743)	0.02 (690)	0.01 (406)	0.06 (77)
Debt servicing costs (% of exports and net income from abroad)	0.19 (69)	0.11 (271)	0.02 (437)	0.15 (444)	0.12 (523)	0.06 (482)	0.21 (112)	0.46 (29)	0.44 (6)
Democracy score	0.56 (1024)	0.48 (1393)	0.56 (1112)	0.61 (834)	0.64 (786)	0.61 (794)	0.33 (622)	0.26 (361)	0.38 (72)
Dependency ratio	0.13 (114)	0.05 (229)	0.07 (222)	0.01 (193)	0.09 (179)	0.07 (226)	0.25 (172)	0.13 (118)	0.35 (9)
Desalinated water produced (10^9 m3/yr)	Insufficient	Insufficient	0.56 (8)	0.67 (10)	0.32 (21)	0.40 (25)	0.08 (41)	0.08 (23)	Insufficient
DOTS all new case detection rate (%)	0.83 (21)	0.62 (91)	0.63 (168)	0.66 (167)	0.69 (203)	0.62 (271)	0.64 (179)	0.52 (155)	0.72 (38)
DOTS new smear-positive case detection rate (%)	0.67 (21)	0.69 (91)	0.65 (168)	0.70 (167)	0.68 (201)	0.58 (269)	0.73 (179)	0.58 (150)	0.63 (38)

Indicator	1	2	3	4	5	6	7	8	9
DOTS population coverage (%)	0.40 (20)	0.20 (88)	0.10 (176)	0.11 (182)	0.11 (238)	0.11 (329)	0.19 (240)	0.22 (240)	0.26 (40)
DOTS treatment success (%)	0.46 (20)	0.71 (84)	0.66 (172)	0.74 (154)	0.60 (193)	0.68 (252)	0.67 (165)	0.66 (110)	0.65 (16)
Drought affected	0.18 (109)	0.03 (400)	0.05 (563)	0.03 (536)	0.03 (566)	0.06 (555)	0.37 (374)	Unknown	Unknown
Drought killed	Unknown	0.38 (400)	0.51 (563)	0.38 (536)	0.68 (566)	1.00 (555)	Unknown	Unknown	Unknown
Drownings- age-adjusted mortality per 100 000	Insufficient	0.19 (20)	0.20 (36)	0.14 (25)	0.38 (45)	0.19 (63)	0.39 (36)	0.36 (42)	0.89 (3)
Earthquake affected	Unknown	0.20 (239)	0.10 (270)	0.07 (333)	0.13 (399)	0.10 (496)	0.18 (315)	0.11 (205)	0.50 (36)
Earthquake killed	Unknown	0.49 (239)	0.26 (270)	0.15 (333)	0.36 (399)	0.30 (496)	0.32 (315)	0.26 (205)	0.93 (36)
Economical infrastructure aid (% of total)	Insufficient	Insufficient	Insufficient	0.70 (11)	0.26 (29)	0.02 (76)	0.08 (280)	0.01 (271)	0.38 (34)
Education aid (% of total aid)	Insufficient	Insufficient	Insufficient	Insufficient	0.43 (14)	0.27 (65)	0.03 (282)	0.01 (271)	0.08 (34)
Electricity consumption- per capita (kWh)	0.14 (29)	0.11 (231)	0.00 (477)	0.12 (548)	0.00 (692)	0.16 (774)	0.05 (694)	0.02 (406)	0.09 (77)
Electricity consumption- total (kWh)	0.27 (29)	0.26 (231)	0.30 (477)	0.26 (548)	0.21 (692)	0.19 (774)	0.11 (694)	0.04 (406)	0.17 (77)
Electricity generation per person (kilowatt-hours)	Insufficient	Insufficient	0.19 (32)	0.07 (43)	0.07 (130)	0.04 (249)	0.08 (283)	0.24 (285)	0.23 (62)
Energe use- total (toe)	0.47 (28)	0.14 (230)	0.21 (473)	0.22 (533)	0.21 (687)	0.16 (766)	0.15 (677)	0.08 (375)	0.35 (47)
Energy production- per capita (toe)	0.10 (28)	0.11 (230)	0.01 (473)	0.01 (533)	0.05 (687)	0.06 (766)	0.02 (677)	0.03 (375)	0.36 (47)
Energy production- total (toe)	0.36 (28)	0.05 (230)	0.18 (473)	0.15 (533)	0.12 (687)	0.09 (766)	0.06 (677)	0.04 (375)	0.20 (47)
Energy use- per capita (toe)	0.16 (28)	0.13 (230)	0.03 (473)	0.06 (533)	0.12 (687)	0.05 (766)	0.01 (677)	0.00 (375)	0.24 (47)
Epidemic affected	0.14 (108)	0.21 (414)	0.16 (552)	0.22 (503)	0.29 (602)	0.18 (578)	0.23 (389)	0.10 (253)	Unknown
Epidemic killed	0.16 (108)	0.53 (414)	0.47 (552)	0.56 (503)	0.36 (602)	0.41 (578)	0.86 (389)	0.69 (253)	Unknown
Estimated ART Coverage (CD4 < 350)	0.97 (4)	0.71 (40)	0.85 (57)	0.77 (94)	0.66 (59)	0.80 (127)	0.73 (69)	0.58 (34)	0.63 (11)
Estimated HIV Prevalence% - (Ages 15-49)	0.13 (40)	0.06 (149)	0.10 (276)	0.07 (281)	0.10 (362)	0.13 (430)	0.54 (360)	0.26 (338)	0.40 (72)
Estimated new births	0.14 (92)	0.23 (201)	0.03 (204)	0.04 (182)	0.03 (170)	0.18 (174)	0.17 (148)	0.20 (87)	0.17 (32)
Estimated new HIV infections (All ages)	0.65 (36)	0.50 (101)	0.35 (198)	0.35 (172)	0.11 (152)	0.21 (158)	0.40 (46)	0.63 (17)	0.53 (11)
Exports of goods and services (% of GDP)	0.06 (183)	0.05 (663)	0.01 (789)	0.01 (714)	0.02 (782)	0.01 (824)	0.05 (704)	0.06 (403)	0.10 (72)
Exports unit value (index- 2000=100)	0.34 (65)	0.02 (237)	0.08 (381)	0.06 (432)	0.10 (506)	0.00 (515)	0.05 (431)	0.04 (322)	0.04 (54)
External debt stocks (% of GNI)	0.01 (105)	0.11 (412)	0.17 (538)	0.07 (534)	0.05 (569)	0.00 (535)	0.04 (147)	0.18 (35)	0.68 (11)
External debt stocks- total (DOD- current US$)	0.12 (108)	0.01 (417)	0.01 (574)	0.03 (542)	0.00 (575)	0.01 (535)	0.05 (148)	0.34 (35)	0.63 (11)
Extreme temp affected	Insufficient	0.68 (70)	0.33 (133)	0.45 (152)	0.41 (248)	0.23 (406)	0.37 (480)	0.28 (288)	0.33 (55)
Extreme temp killed	Insufficient	0.83 (70)	0.44 (133)	0.37 (152)	0.65 (248)	0.52 (406)	0.49 (480)	0.38 (288)	0.49 (55)
Falls- age adjusted mortality per 100 000	Insufficient	0.62 (20)	0.16 (36)	0.13 (25)	0.45 (45)	0.04 (63)	0.26 (36)	0.17 (42)	0.52 (3)
Female 0-4 years (%)	0.03 (114)	0.01 (229)	0.06 (222)	0.16 (193)	0.05 (179)	0.08 (226)	0.17 (172)	0.16 (118)	0.27 (9)
Female 10-14 years (%)	0.12 (114)	0.15 (229)	0.15 (222)	0.01 (193)	0.03 (179)	0.10 (226)	0.22 (172)	0.12 (118)	0.74 (9)
Female 15-19 years (%)	0.12 (114)	0.10 (229)	0.18 (222)	0.15 (193)	0.22 (179)	0.02 (226)	0.11 (172)	0.13 (118)	0.17 (9)

Indicator	1	2	3	4	5	6	7	8	9
Female 15-24 employment to population (%)	0.52 (36)	0.44 (147)	0.61 (254)	0.59 (258)	0.64 (370)	0.63 (449)	0.63 (391)	0.63 (319)	0.52 (45)
Female 15-24 unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.61 (28)	0.46 (30)	0.66 (199)	0.67 (205)	0.71 (13)
Female 15-64 labour to population (%)	0.55 (71)	0.38 (278)	0.55 (386)	0.51 (417)	0.59 (561)	0.62 (667)	0.64 (608)	0.59 (367)	0.52 (45)
Female 15+ labour to population (%)	0.34 (71)	0.52 (278)	0.50 (386)	0.49 (417)	0.61 (561)	0.61 (667)	0.60 (608)	0.60 (367)	0.64 (45)
Female 15+ unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.55 (28)	0.62 (30)	0.67 (199)	0.73 (205)	0.65 (13)
Female 20-39 years (%)	0.18 (114)	0.06 (229)	0.05 (222)	0.13 (193)	0.16 (179)	0.05 (226)	0.10 (172)	0.10 (118)	0.26 (9)
Female 25-54 labour to population(%)	0.40 (71)	0.58 (278)	0.58 (386)	0.61 (417)	0.61 (561)	0.67 (667)	0.65 (608)	0.67 (367)	0.54 (45)
Female 25-54 unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.70 (29)	0.57 (38)	0.73 (200)	0.65 (205)	0.77 (13)
Female 40-59 years (%)	0.14 (114)	0.15 (229)	0.07 (222)	0.16 (193)	0.19 (179)	0.05 (226)	0.02 (172)	0.15 (118)	0.15 (9)
Female 5-9 years (%)	0.07 (114)	0.09 (229)	0.05 (222)	0.26 (193)	0.19 (179)	0.17 (226)	0.06 (172)	0.35 (118)	0.15 (9)
Female 55+ unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.68 (29)	0.52 (38)	0.72 (200)	0.69 (205)	0.69 (13)
Female 65+ labour to population (%)	0.57 (71)	0.57 (278)	0.59 (386)	0.45 (417)	0.69 (561)	0.71 (667)	0.69 (608)	0.55 (367)	0.62 (45)
Female above 15 employment to population (%)	0.39 (36)	0.50 (147)	0.45 (254)	0.46 (258)	0.59 (370)	0.56 (449)	0.59 (391)	0.62 (319)	0.61 (45)
Female above 60 (%)	0.31 (114)	0.15 (229)	0.10 (222)	0.03 (193)	0.04 (179)	0.01 (226)	0.01 (172)	0.10 (118)	0.58 (9)
Female agriculture workers (%)	Insufficient	0.37 (10)	0.48 (41)	0.54 (88)	0.46 (224)	0.63 (341)	0.64 (465)	0.58 (322)	0.63 (41)
Female contributing family workers (%)	Insufficient	0.42 (8)	0.28 (24)	0.46 (37)	0.63 (151)	0.61 (283)	0.67 (379)	0.61 (306)	0.65 (44)
Female industry workers (%)	Insufficient	0.73 (10)	0.57 (41)	0.62 (88)	0.66 (224)	0.64 (346)	0.59 (466)	0.66 (322)	0.64 (41)
Female long-term unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.74 (22)	0.64 (119)	0.69 (272)	0.68 (292)	0.75 (37)
Female salaried employees (%)	Insufficient	0.38 (9)	0.32 (24)	0.43 (46)	0.56 (164)	0.57 (286)	0.66 (394)	0.68 (307)	0.64 (44)
Female self-employed (%)	Insufficient	0.28 (7)	0.23 (24)	0.28 (45)	0.60 (164)	0.62 (286)	0.69 (381)	0.67 (283)	0.60 (41)
Female service workers (%)	Insufficient	0.27 (10)	0.44 (41)	0.51 (88)	0.57 (224)	0.65 (346)	0.60 (466)	0.67 (322)	0.62 (41)
Fires- age-adjusted mortality per 100 000	Insufficient	0.50 (20)	0.19 (36)	0.48 (25)	0.26 (45)	0.30 (63)	0.04 (36)	0.24 (42)	0.58 (3)
Fixed broadband Internet subscribers	0.49 (4)	0.26 (62)	0.35 (115)	0.19 (144)	0.18 (159)	0.11 (263)	0.13 (217)	0.12 (265)	0.23 (75)
Fixed broadband Internet subscribers (per 100 people)	0.49 (4)	0.10 (62)	0.19 (115)	0.03 (144)	0.12 (159)	0.05 (263)	0.02 (217)	0.02 (265)	0.09 (75)
Flood affected	0.08 (112)	0.09 (439)	0.07 (585)	0.08 (567)	0.15 (674)	0.12 (712)	0.15 (593)	0.09 (357)	0.09 (70)
Flood killed	0.49 (112)	0.32 (439)	0.41 (585)	0.43 (567)	0.43 (674)	0.33 (712)	0.46 (593)	0.39 (357)	0.70 (70)
Foreign direct investment- net inflows (% of GDP)	0.20 (102)	0.01 (389)	0.02 (559)	0.02 (545)	0.00 (643)	0.01 (727)	0.06 (629)	0.01 (379)	0.30 (75)
Foreign direct investment- net outflows (% of GDP)	0.16 (30)	0.05 (123)	0.04 (219)	0.03 (278)	0.02 (409)	0.14 (513)	0.09 (547)	0.03 (373)	0.30 (74)
Forest area (sq. km)	0.39 (35)	0.42 (142)	0.09 (254)	0.10 (265)	0.04 (375)	0.15 (465)	0.05 (370)	0.09 (291)	0.18 (44)
Forest coverage (%)	0.74 (4)	0.34 (33)	0.13 (43)	0.25 (52)	0.22 (58)	0.20 (97)	0.23 (61)	0.22 (59)	0.50 (4)
Forest land (ha)	Insufficient	0.90 (5)	0.37 (12)	0.46 (15)	0.45 (19)	0.28 (30)	0.42 (19)	0.41 (19)	Insufficient

Indicator	1	2	3	4	5	6	7	8	9
Forest plantation area (ha)	Insufficient	0.57 (26)	0.45 (27)	0.30 (30)	0.43 (29)	0.24 (57)	0.45 (45)	0.18 (33)	Insufficient
Forest products per ha (USD)	Insufficient	0.96 (5)	0.45 (6)	0.46 (11)	0.61 (9)	0.54 (19)	0.70 (18)	0.48 (21)	Insufficient
Gapminder name	Insufficient	0.73 (5)	0.64 (12)	0.23 (24)	0.40 (10)	0.27 (25)	0.20 (24)	0.40 (32)	0.41 (29)
GDP per capita growth (annual %)	0.04 (188)	0.10 (665)	0.05 (779)	0.02 (726)	0.00 (788)	0.04 (856)	0.00 (703)	0.01 (406)	0.01 (80)
GDP per employee- (constant 1990$)	0.27 (54)	0.36 (136)	0.31 (234)	0.25 (223)	0.23 (356)	0.25 (505)	0.16 (546)	0.13 (321)	0.24 (20)
GDP per working hour- (constant 1990$)	Insufficient	Insufficient	Insufficient	0.72 (6)	0.37 (56)	0.50 (220)	0.50 (451)	0.43 (312)	0.35 (20)
General government expenditure on health as percentage of total expenditure on health	0.26 (22)	0.44 (102)	0.57 (198)	0.57 (173)	0.57 (271)	0.64 (343)	0.57 (272)	0.63 (252)	0.33 (21)
General government expenditure on health as percentage of total government expenditure	0.64 (22)	0.47 (102)	0.64 (198)	0.57 (173)	0.62 (267)	0.64 (341)	0.69 (272)	0.68 (252)	0.58 (21)
GINI index	0.80 (4)	0.37 (21)	0.26 (47)	0.44 (49)	0.25 (104)	0.22 (119)	0.02 (61)	0.43 (19)	Insufficient
Government and civil society aid (% of total aid)	Insufficient	Insufficient	Insufficient	Insufficient	0.69 (10)	0.12 (54)	0.07 (273)	0.01 (265)	0.51 (34)
Gross capital formation (% of GDP)	0.09 (194)	0.04 (646)	0.02 (702)	0.04 (660)	0.00 (760)	0.01 (824)	0.09 (702)	0.05 (403)	0.16 (72)
HDI	0.37 (15)	0.05 (70)	0.13 (97)	0.15 (116)	0.10 (133)	0.07 (196)	0.10 (163)	0.18 (122)	0.37 (8)
Health aid (% of total aid)	Insufficient	Insufficient	Insufficient	Insufficient	0.38 (10)	0.04 (64)	0.06 (283)	0.01 (268)	0.10 (34)
High-technology exports (% of manufactured exports)	0.17 (15)	0.14 (85)	0.03 (177)	0.07 (162)	0.01 (286)	0.01 (418)	0.03 (409)	0.06 (354)	0.16 (73)
HIV Incidence % (Ages 15-49)	0.54 (36)	0.50 (101)	0.58 (198)	0.52 (172)	0.19 (152)	0.26 (158)	Unknown	Unknown	Unknown
Homicide 0-14 all age adj	0.31 (15)	0.32 (90)	0.09 (171)	0.11 (202)	0.06 (278)	0.05 (458)	0.01 (520)	0.03 (302)	0.05 (45)
Homicide 15-29 all	0.62 (15)	0.19 (90)	0.11 (171)	0.01 (202)	0.07 (278)	0.01 (458)	0.08 (520)	0.04 (302)	0.14 (45)
Homicide 30-44 all age adj	0.10 (15)	0.09 (90)	0.01 (171)	0.13 (202)	0.02 (278)	0.02 (458)	0.04 (520)	0.04 (302)	0.60 (45)
Homicide 45-59 all age adj	0.43 (15)	0.05 (90)	0.10 (171)	0.09 (202)	0.10 (278)	0.04 (458)	0.01 (520)	0.03 (302)	0.54 (45)
Homicide 60+ all age adj	0.45 (15)	0.24 (90)	0.04 (171)	0.01 (202)	0.05 (278)	0.02 (458)	0.02 (520)	0.04 (302)	0.46 (45)
Hourly compensation (US$)	Insufficient	Insufficient	Insufficient	Insufficient	0.60 (41)	0.47 (70)	0.54 (338)	0.44 (296)	0.47 (20)
Hydro production- per capita (toe)	0.28 (29)	0.03 (231)	0.05 (477)	0.07 (548)	0.06 (692)	0.02 (774)	0.03 (694)	0.05 (406)	0.05 (77)
Hydro production- total (toe)	0.40 (29)	0.29 (231)	0.21 (477)	0.29 (548)	0.27 (692)	0.20 (774)	0.11 (694)	0.14 (406)	0.10 (77)
Import value index (2000 = 100)	0.04 (69)	0.08 (236)	0.08 (371)	0.03 (426)	0.09 (499)	0.05 (493)	0.05 (415)	0.01 (313)	0.10 (47)
Imports of goods and services (% of GDP)	0.04 (183)	0.05 (663)	0.03 (789)	0.06 (714)	0.01 (782)	0.01 (824)	0.04 (704)	0.01 (403)	0.07 (72)
income per person	0.02 (1296)	0.01 (1621)	0.04 (1251)	0.02 (879)	0.08 (829)	0.11 (873)	0.04 (712)	0.05 (413)	0.07 (81)
Income per person (PPP) with projections	0.02 (1318)	0.05 (1653)	0.02 (1295)	0.02 (906)	0.08 (842)	0.10 (907)	0.08 (744)	0.08 (446)	0.07 (85)
Income share held by fourth 20%	0.60 (4)	0.40 (21)	0.38 (47)	0.47 (49)	0.47 (104)	0.59 (120)	0.54 (61)	0.29 (19)	Insufficient
Income share held by highest 10%	0.83 (4)	0.41 (21)	0.35 (47)	0.21 (49)	0.32 (104)	0.33 (120)	0.27 (61)	0.74 (19)	Insufficient

Indicator	1	2	3	4	5	6	7	8	9
Income share held by highest 20%	0.77 (4)	0.36 (21)	0.25 (47)	0.34 (49)	0.34 (104)	0.31 (120)	0.26 (61)	0.24 (19)	Insufficient
Income share held by lowest 10%	0.78 (4)	0.12 (21)	0.41 (47)	0.38 (49)	0.54 (104)	0.56 (120)	0.41 (61)	0.27 (19)	Insufficient
Income share held by lowest 20%	0.64 (4)	0.52 (21)	0.42 (47)	0.31 (49)	0.39 (104)	0.58 (120)	0.38 (61)	0.44 (19)	Insufficient
Income share held by second 20%	0.61 (4)	0.48 (21)	0.27 (47)	0.31 (49)	0.42 (104)	0.49 (120)	0.35 (61)	0.55 (19)	Insufficient
Income share held by third 20%	0.89 (4)	0.61 (21)	0.39 (47)	0.46 (49)	0.30 (104)	0.49 (120)	0.06 (61)	0.36 (19)	Insufficient
Industrial water withdrawal as % of total water withdrawal (%)	0.46 (4)	0.44 (11)	0.57 (24)	0.28 (25)	0.52 (46)	0.43 (39)	0.05 (34)	0.26 (26)	Insufficient
Industry- value added (% of GDP)	0.01 (164)	0.02 (584)	0.01 (657)	0.04 (530)	0.02 (659)	0.02 (777)	0.02 (625)	0.01 (376)	0.11 (64)
Infant Mortality Rate	0.18 (789)	0.30 (1138)	0.33 (1014)	0.31 (794)	0.38 (762)	0.38 (807)	0.42 (674)	0.28 (407)	0.59 (79)
Inflation- GDP deflator (annual %)	0.01 (188)	0.04 (653)	0.03 (741)	0.09 (651)	0.00 (734)	0.00 (831)	0.01 (700)	0.01 (406)	0.03 (80)
Internet users (per 100 people)	0.31 (35)	0.07 (133)	0.09 (250)	0.06 (257)	0.03 (342)	0.11 (462)	0.11 (421)	0.05 (365)	0.19 (79)
Life expectancy at brith	0.25 (905)	0.25 (1233)	0.26 (1037)	0.25 (812)	0.32 (747)	0.33 (815)	0.32 (689)	0.30 (403)	0.08 (76)
Lifetime risk per 1000 of maternal deaths	Insufficient	0.53 (5)	0.70 (12)	0.29 (25)	0.57 (8)	0.54 (24)	0.75 (24)	0.30 (32)	0.61 (29)
Liver female cases	Insufficient	0.55 (9)	0.46 (21)	0.59 (11)	0.27 (23)	0.33 (30)	0.52 (17)	0.36 (21)	Insufficient
Liver female deaths	Insufficient	0.51 (9)	0.35 (21)	0.29 (11)	0.32 (23)	0.39 (30)	0.24 (17)	0.38 (21)	Insufficient
Liver Female Incidence	Insufficient	0.52 (13)	0.47 (48)	0.51 (38)	0.33 (50)	0.54 (71)	0.49 (121)	0.60 (75)	Insufficient
Liver Female Mortality	Insufficient	0.42 (16)	0.28 (40)	0.61 (68)	0.48 (130)	0.65 (255)	0.65 (332)	0.61 (189)	0.61 (8)
Liver male cases	Insufficient	0.78 (9)	0.62 (21)	0.48 (11)	0.14 (23)	0.36 (30)	0.26 (17)	0.28 (21)	Insufficient
Liver male deaths	Insufficient	0.75 (9)	0.50 (21)	0.50 (11)	0.25 (23)	0.54 (30)	0.34 (17)	0.34 (21)	Insufficient
Liver Male Incidence	Insufficient	0.50 (13)	0.33 (49)	0.43 (39)	0.37 (51)	0.39 (71)	0.52 (122)	0.52 (75)	Insufficient
Liver Male Mortality	Insufficient	0.24 (16)	0.27 (39)	0.49 (65)	0.43 (134)	0.62 (256)	0.55 (334)	0.57 (191)	0.40 (8)
Lung female cases	Insufficient	0.67 (9)	0.48 (21)	0.33 (11)	0.24 (23)	0.32 (30)	0.41 (17)	0.27 (21)	Insufficient
Lung female deaths	Insufficient	0.67 (9)	0.37 (21)	0.41 (11)	0.25 (23)	0.38 (30)	0.42 (17)	0.18 (21)	Insufficient
Lung Female Incidence	Insufficient	0.80 (13)	0.43 (50)	0.38 (39)	0.43 (51)	0.31 (71)	0.35 (122)	0.28 (75)	Insufficient
Lung Female Mortality	0.41 (20)	0.50 (127)	0.48 (216)	0.61 (269)	0.60 (338)	0.65 (494)	0.58 (504)	0.48 (226)	0.26 (10)
Lung male cases	Insufficient	0.34 (9)	0.19 (21)	0.43 (11)	0.17 (23)	0.14 (30)	0.26 (17)	0.34 (21)	Insufficient
Lung male deaths	Insufficient	0.35 (9)	0.21 (21)	0.47 (11)	0.22 (23)	0.22 (30)	0.34 (17)	0.37 (21)	Insufficient
Lung Male Incidence	Insufficient	0.35 (13)	0.40 (50)	0.53 (39)	0.15 (51)	0.14 (71)	0.27 (122)	0.30 (75)	Insufficient
Lung Male Mortality	0.46 (20)	0.37 (126)	0.38 (226)	0.35 (286)	0.42 (345)	0.38 (501)	0.39 (520)	0.36 (229)	0.20 (10)
Male 0-4 years (%)	0.13 (114)	0.23 (229)	0.13 (222)	0.01 (193)	0.15 (179)	0.04 (226)	0.06 (172)	0.07 (118)	0.28 (9)
Male 10-14 years (%)	0.02 (114)	0.14 (229)	0.08 (222)	0.08 (193)	0.31 (179)	0.20 (226)	0.23 (172)	0.10 (118)	0.38 (9)
Male 15-19 years (%)	0.17 (114)	0.03 (229)	0.05 (222)	0.01 (193)	0.06 (179)	0.05 (226)	0.05 (172)	0.03 (118)	0.15 (9)

Indicator	1	2	3	4	5	6	7	8	9
Male 15-24 employment to population (%)	0.45 (36)	0.55 (147)	0.59 (254)	0.61 (258)	0.58 (370)	0.63 (449)	0.63 (391)	0.66 (319)	0.53 (45)
Male 15-24 unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.66 (27)	0.48 (30)	0.66 (199)	0.66 (205)	0.36 (13)
Male 15-64 labour to population (%)	0.51 (71)	0.69 (278)	0.72 (386)	0.69 (417)	0.67 (561)	0.59 (667)	0.68 (608)	0.61 (367)	0.62 (45)
Male 15+ labour to population (%)	0.53 (71)	0.65 (278)	0.66 (386)	0.67 (417)	0.64 (561)	0.56 (667)	0.67 (608)	0.68 (367)	0.55 (45)
Male 15+ unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.55 (27)	0.64 (30)	0.65 (199)	0.68 (205)	0.60 (13)
Male 20-39 years (%)	0.20 (114)	0.14 (229)	0.10 (222)	0.05 (193)	0.25 (179)	0.08 (226)	0.01 (172)	0.07 (118)	0.23 (9)
Male 25-54 labour to population (%)	0.48 (71)	0.50 (278)	0.46 (386)	0.60 (417)	0.66 (561)	0.60 (667)	0.66 (608)	0.59 (367)	0.57 (45)
Male 25-54 unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.62 (29)	0.45 (38)	0.65 (200)	0.66 (205)	0.70 (13)
Male 40-59 years (%)	0.06 (114)	0.03 (229)	0.19 (222)	0.04 (193)	0.14 (179)	0.20 (226)	0.01 (172)	0.23 (118)	0.51 (9)
Male 5-9 years (%)	0.12 (114)	0.08 (229)	0.01 (222)	0.10 (193)	0.07 (179)	0.06 (226)	0.06 (172)	0.04 (118)	0.21 (9)
Male 55+ unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.65 (29)	0.70 (38)	0.70 (200)	0.73 (205)	0.63 (13)
Male 65+ labour to population (%)	0.44 (71)	0.59 (278)	0.54 (386)	0.62 (417)	0.63 (561)	0.63 (667)	0.71 (608)	0.68 (367)	0.43 (45)
Male above 15 employment to population (%)	0.36 (36)	0.63 (147)	0.65 (254)	0.58 (258)	0.71 (370)	0.63 (449)	0.62 (391)	0.65 (319)	0.57 (45)
Male above 60 (%)	0.06 (114)	0.21 (229)	0.12 (222)	0.03 (193)	0.11 (179)	0.04 (226)	0.07 (172)	0.12 (118)	0.23 (9)
Male agriculture workers (%)	Insufficient	0.63 (10)	0.38 (41)	0.46 (88)	0.59 (224)	0.63 (341)	0.67 (465)	0.61 (322)	0.65 (41)
Male contributing family workers (%)	Insufficient	0.46 (8)	0.31 (24)	0.47 (37)	0.66 (151)	0.76 (283)	0.78 (379)	0.61 (306)	0.63 (44)
Male industry workers (%)	Insufficient	0.62 (10)	0.41 (41)	0.49 (88)	0.64 (224)	0.62 (346)	0.62 (466)	0.59 (322)	0.59 (41)
Male long-term unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.67 (22)	0.71 (119)	0.75 (272)	0.84 (292)	0.62 (37)
Male salaried employees (%)	Insufficient	0.75 (9)	0.36 (24)	0.31 (46)	0.54 (164)	0.62 (286)	0.57 (394)	0.67 (307)	0.53 (44)
Male self-employed (%)	Insufficient	0.34 (7)	0.23 (24)	0.43 (45)	0.55 (164)	0.61 (286)	0.60 (381)	0.65 (283)	0.48 (41)
Male service workers (%)	Insufficient	0.52 (10)	0.35 (41)	0.51 (88)	0.56 (224)	0.59 (346)	0.63 (466)	0.61 (322)	0.56 (41)
Malnutrition prevalence- weight for age (% of children under 5)	0.40 (5)	0.41 (31)	0.41 (56)	0.49 (52)	0.51 (54)	0.63 (61)	0.51 (13)	0.76 (7)	Insufficient
Market capitalization of listed companies (% of GDP)	Insufficient	0.34 (19)	0.03 (103)	0.02 (131)	0.02 (245)	0.04 (387)	0.07 (405)	0.05 (356)	0.08 (75)
Median age	0.15 (114)	0.22 (229)	0.27 (222)	0.23 (193)	0.16 (179)	0.14 (226)	0.14 (172)	0.18 (118)	0.38 (9)
Merchandise trade (% of GDP)	0.10 (203)	0.02 (667)	0.01 (758)	0.08 (651)	0.01 (736)	0.08 (794)	0.01 (686)	0.01 (398)	0.04 (78)
Military expenditure (% of GDP)	0.32 (32)	0.10 (159)	0.02 (263)	0.04 (267)	0.08 (379)	0.08 (468)	0.04 (417)	0.03 (340)	0.18 (70)
Mobile cellular subscriptions (per 100 people)	0.28 (116)	0.02 (394)	0.05 (553)	0.19 (551)	0.05 (656)	0.07 (786)	0.02 (676)	0.04 (410)	0.13 (81)
Mobile cellular subscriptions- total number	0.24 (116)	0.03 (394)	0.08 (553)	0.04 (551)	0.04 (656)	0.04 (786)	0.05 (676)	0.02 (410)	0.13 (81)
Motor vehicles (not 2-wheelers) per 1-000 population	Insufficient	0.11 (15)	0.54 (11)	0.41 (33)	0.21 (37)	0.10 (78)	0.38 (82)	0.34 (107)	0.21 (30)
Municipal water withdrawal as % of total withdrawal (%)	0.79 (4)	0.94 (15)	0.42 (27)	0.54 (26)	0.46 (49)	0.55 (42)	0.52 (37)	0.64 (27)	Insufficient

Indicator	1	2	3	4	5	6	7	8	9
Municipal water withdrawal per capita (m3/inhab/yr)	0.63 (4)	0.38 (20)	0.15 (40)	0.14 (31)	0.27 (57)	0.47 (48)	0.07 (44)	0.19 (28)	Insufficient
Murder per 100-000- age adjusted	0.37 (18)	0.13 (122)	0.06 (221)	0.07 (256)	0.04 (352)	0.02 (534)	0.08 (542)	0.02 (290)	0.50 (15)
Murdered men- per 100-000- age adjusted	0.57 (16)	0.04 (101)	0.02 (186)	0.03 (216)	0.01 (289)	0.12 (461)	0.11 (495)	0.21 (244)	0.27 (13)
Murdered women- per 100-000- age adjusted	0.26 (16)	0.18 (101)	0.09 (186)	0.07 (216)	0.05 (289)	0.01 (461)	0.02 (494)	0.08 (244)	0.38 (13)
Natural Gas Production per person (tonnes oil equivalent)	1.00 (3)	0.04 (49)	0.08 (100)	0.08 (122)	0.14 (206)	0.08 (293)	0.04 (236)	0.18 (199)	0.34 (38)
Natural Gas Production total (tonnes oil equivalent)	0.55 (3)	0.28 (49)	0.07 (100)	0.10 (122)	0.09 (206)	0.02 (293)	0.03 (236)	0.02 (199)	0.04 (38)
Natural Gas Proved reserves per person (tonnes oil equivalent)	Insufficient	0.60 (10)	0.08 (83)	0.23 (113)	0.18 (181)	0.12 (247)	0.01 (196)	0.12 (173)	0.38 (34)
Neonates protected at birth against neonatal tetanus (PAB) (%)	0.54 (39)	0.72 (156)	0.78 (269)	0.76 (256)	0.79 (307)	0.78 (258)	0.69 (65)	0.60 (9)	Insufficient
Net barter terms of trade (2000 = 100)	0.13 (68)	0.08 (248)	0.17 (338)	0.15 (390)	0.11 (439)	0.03 (442)	0.00 (430)	0.05 (333)	0.29 (58)
New and relapse cases	0.33 (18)	0.57 (21)	0.30 (12)	0.37 (31)	0.46 (103)	0.55 (257)	0.48 (229)	0.53 (174)	0.33 (24)
New and relapse cases (per 100 000 population)	0.59 (67)	0.66 (236)	0.72 (359)	0.64 (387)	0.57 (508)	0.62 (641)	0.69 (542)	0.45 (327)	0.35 (40)
New smear-positive cases	Insufficient	Insufficient	0.36 (15)	0.27 (24)	0.49 (86)	0.57 (177)	0.49 (165)	0.47 (194)	0.52 (36)
New smear-positive cases (per 100 000 population)	0.49 (27)	0.72 (108)	0.59 (205)	0.62 (209)	0.59 (288)	0.57 (382)	0.81 (274)	0.53 (267)	0.43 (40)
Nuclear production- per capita (toe)	Unknown	0.39 (231)	0.31 (477)	0.27 (548)	0.12 (692)	0.10 (774)	0.13 (694)	0.02 (406)	0.08 (77)
Nuclear production- total (toe)	Unknown	0.27 (231)	0.28 (477)	0.18 (548)	0.29 (692)	0.15 (774)	0.04 (694)	0.01 (406)	0.08 (77)
ODA % GNI	Insufficient	0.91 (4)	0.69 (25)	0.68 (58)	0.78 (71)	0.66 (123)	0.71 (313)	0.61 (289)	0.67 (48)
ODA aid per person (constant 2007 US$)	Insufficient	0.77 (4)	0.48 (25)	0.17 (58)	0.30 (71)	0.02 (123)	0.21 (312)	0.04 (281)	0.21 (34)
Oil Proved reserves per person (tonnes)	Insufficient	0.58 (23)	0.26 (52)	0.10 (126)	0.02 (217)	0.10 (257)	0.03 (164)	0.09 (143)	0.25 (26)
Oil proved reserves total (tonnes)	Insufficient	0.43 (23)	0.11 (52)	0.11 (126)	0.05 (217)	0.05 (257)	0.13 (164)	0.10 (143)	0.08 (26)
One-year-olds immunized with MCV (%)	0.63 (36)	0.62 (150)	0.68 (269)	0.71 (275)	0.89 (390)	0.81 (488)	0.62 (397)	0.84 (327)	0.75 (45)
One-year-olds immunized with three doses of diphtheria tetanus toxoid and pertussis (DTP3) (%)	0.53 (36)	0.60 (150)	0.73 (269)	0.71 (275)	0.85 (390)	0.79 (488)	0.72 (397)	0.88 (327)	0.77 (45)
One-year-olds immunized with three doses of Hepatitis B (HepB3) (%)	1.00 (3)	0.53 (32)	0.51 (73)	0.61 (105)	0.71 (199)	0.64 (303)	0.47 (224)	0.68 (156)	0.71 (25)
One-year-olds immunized with three doses of Hib (Hib3) vaccine (%)	Insufficient	0.54 (12)	0.53 (30)	0.68 (24)	0.68 (42)	0.67 (140)	0.57 (191)	0.64 (239)	0.60 (42)
Other social services aid (% of total aid)	Insufficient	Insufficient	Insufficient	0.82 (7)	0.18 (21)	0.04 (67)	0.11 (273)	0.02 (269)	0.38 (34)

Indicator	1	2	3	4	5	6	7	8	9
Out-of-pocket expenditure as percentage of total health expenditure	0.18 (22)	0.05 (102)	0.08 (198)	0.04 (173)	0.05 (271)	0.04 (343)	0.10 (270)	0.08 (242)	0.30 (21)
PC per 100	0.32 (11)	0.56 (75)	0.60 (187)	0.65 (166)	0.65 (265)	0.63 (372)	0.50 (358)	0.29 (274)	0.44 (17)
People living with HIV	0.07 (40)	0.03 (149)	0.03 (276)	0.02 (281)	0.10 (359)	0.16 (430)	0.05 (360)	0.05 (338)	0.57 (72)
Per capita CO2 emissions (metric tons of carbon)	0.29 (1035)	0.26 (1403)	0.42 (1155)	0.46 (795)	0.57 (795)	0.59 (773)	0.57 (654)	0.59 (343)	0.33 (22)
Per capita government expenditure on health (PPP int. $)	0.74 (22)	0.71 (101)	0.59 (198)	0.68 (173)	0.66 (271)	0.62 (343)	0.52 (272)	0.38 (252)	0.45 (21)
Per capita government expenditure on health at average exchange rate (US$)	0.85 (20)	0.68 (101)	0.66 (198)	0.69 (172)	0.70 (271)	0.62 (343)	0.61 (272)	0.39 (252)	0.51 (21)
Per capita total expenditure on health (PPP int. $)	0.56 (22)	0.67 (102)	0.71 (198)	0.68 (173)	0.59 (271)	0.66 (343)	0.53 (272)	0.34 (252)	0.12 (21)
Per capita total expenditure on health at average exchange rate (US$)	0.63 (22)	0.65 (102)	0.60 (198)	0.67 (173)	0.67 (271)	0.66 (343)	0.52 (272)	0.34 (252)	0.40 (21)
Personal computers	0.59 (11)	0.19 (75)	0.28 (188)	0.28 (167)	0.03 (265)	0.14 (372)	0.24 (358)	0.10 (274)	0.49 (17)
Poisonings- age-adjusted mortality per 100 000	Insufficient	0.18 (20)	0.12 (36)	0.11 (25)	0.14 (45)	0.19 (63)	0.21 (36)	0.11 (42)	0.76 (3)
Population	0.07 (1317)	0.00 (1646)	0.01 (1281)	0.05 (879)	0.02 (830)	0.01 (874)	0.02 (714)	0.06 (413)	0.05 (81)
Population density (per square km)	0.15 (481)	0.14 (1048)	0.13 (1041)	0.11 (872)	0.08 (840)	0.09 (909)	0.09 (745)	0.11 (448)	0.29 (85)
Population growth (annual %)	0.04 (223)	0.01 (726)	0.09 (831)	0.06 (766)	0.02 (811)	0.02 (870)	0.07 (708)	0.07 (408)	0.16 (79)
Population in urban agglomerations of more than 1 million (% of total population)	0.34 (21)	0.11 (99)	0.09 (124)	0.26 (121)	0.10 (106)	0.13 (144)	0.23 (111)	0.05 (96)	0.30 (20)
Population policies aid (% of total)	Insufficient	Insufficient	Insufficient	Insufficient	Insufficient	Insufficient	0.20 (104)	0.07 (229)	0.18 (34)
Poverty headcount ratio at $1.25 a day (PPP) (% of population)	0.88 (4)	0.57 (21)	0.28 (53)	0.13 (52)	0.29 (103)	0.31 (120)	0.35 (58)	Insufficient	Insufficient
Poverty headcount ratio at $2 a day (PPP) (% of population)	0.62 (4)	0.44 (21)	0.19 (53)	0.08 (52)	0.16 (103)	0.32 (120)	0.16 (58)	Insufficient	Insufficient
Poverty headcount ratio at national poverty line (% of population)	Insufficient	0.13 (12)	0.37 (25)	0.27 (27)	0.33 (41)	0.34 (37)	0.36 (8)	Insufficient	Insufficient
Poverty headcount ratio at rural poverty line (% of rural population)	Insufficient	0.35 (9)	0.35 (24)	0.42 (21)	0.11 (29)	0.32 (27)	0.59 (3)	Insufficient	Insufficient
Poverty headcount ratio at urban poverty line (% of urban population)	Insufficient	0.90 (9)	0.22 (24)	0.07 (21)	0.36 (29)	0.47 (23)	0.43 (5)	Insufficient	Insufficient

Indicator	1	2	3	4	5	6	7	8	9
Prevalence of current tobacco use among adults (>=15 years) (%) both sexes	Insufficient	0.77 (11)	0.49 (20)	0.54 (24)	0.45 (28)	0.50 (47)	0.46 (37)	0.45 (47)	1.00 (3)
Prevalence of current tobacco use among adults (>=15 years) (%) female	Insufficient	0.58 (17)	0.62 (30)	0.40 (34)	0.50 (46)	0.40 (72)	0.41 (53)	0.41 (68)	1.00 (5)
Prevalence of current tobacco use among adults (>=15 years) (%) male	Insufficient	0.74 (11)	0.69 (20)	0.57 (24)	0.16 (29)	0.46 (47)	0.48 (37)	0.33 (47)	1.00 (3)
Primary forest land (ha)	Insufficient	0.54 (7)	0.41 (8)	0.37 (14)	0.24 (15)	0.38 (35)	0.46 (31)	0.45 (15)	Insufficient
Private expenditure on health as percentage of total expenditure on health	0.25 (22)	0.51 (102)	0.57 (198)	0.53 (173)	0.55 (271)	0.58 (343)	0.55 (272)	0.65 (252)	0.47 (21)
Privately owned forest (%)	Insufficient	Unknown	0.63 (7)	0.77 (19)	0.50 (13)	0.37 (25)	0.68 (24)	0.26 (28)	Insufficient
Privately owned wooded land (%)	Insufficient	Unknown	0.46 (5)	0.64 (14)	0.97 (8)	0.36 (16)	0.45 (15)	0.59 (17)	Insufficient
Production sector aid (% of total aid)	Insufficient	Insufficient	Insufficient	0.29 (12)	0.06 (34)	0.09 (81)	0.09 (284)	0.03 (272)	0.12 (34)
Proportion of the population using improved drinking water sources- rural	0.67 (8)	0.62 (43)	0.63 (71)	0.66 (84)	0.77 (88)	0.77 (133)	0.31 (92)	0.22 (106)	0.37 (30)
Proportion of the population using improved drinking water sources- total	0.58 (8)	0.55 (43)	0.74 (71)	0.63 (84)	0.68 (88)	0.81 (133)	0.46 (92)	0.30 (108)	0.58 (30)
Proportion of the population using improved drinking water sources- urban	0.64 (8)	0.69 (43)	0.74 (71)	0.74 (84)	0.70 (90)	0.78 (141)	0.62 (101)	0.40 (109)	0.74 (31)
Proportion of the population using improved sanitation facilities- rural	0.89 (8)	0.43 (43)	0.67 (71)	0.55 (84)	0.68 (85)	0.70 (133)	0.23 (95)	0.20 (103)	0.31 (30)
Proportion of the population using improved sanitation facilities- total	0.63 (8)	0.67 (43)	0.66 (71)	0.62 (84)	0.61 (85)	0.73 (133)	0.32 (95)	0.23 (103)	0.37 (30)
Proportion of the population using improved sanitation facilities- urban	0.64 (8)	0.41 (43)	0.63 (71)	0.61 (84)	0.68 (89)	0.73 (141)	0.32 (101)	0.22 (103)	0.36 (31)
Prostate male cases	Insufficient	0.52 (9)	0.36 (21)	0.19 (11)	0.49 (23)	0.18 (30)	0.31 (17)	0.11 (21)	Insufficient
Prostate male deaths	Insufficient	0.73 (9)	0.25 (21)	0.26 (11)	0.25 (23)	0.42 (30)	0.30 (17)	0.20 (21)	Insufficient
Prostate Male Incidence	Insufficient	0.24 (13)	0.33 (50)	0.21 (39)	0.16 (51)	0.14 (71)	0.30 (122)	0.17 (75)	Insufficient
Prostate Male Mortality	0.31 (19)	0.45 (126)	0.48 (217)	0.41 (269)	0.56 (338)	0.54 (493)	0.54 (504)	0.44 (226)	0.41 (10)
Reported Cases	0.24 (29)	0.25 (110)	0.01 (227)	0.05 (191)	0.10 (262)	0.12 (211)	0.08 (38)	0.74 (9)	Insufficient
Reported cases per 100000	0.24 (29)	0.06 (110)	0.07 (227)	0.03 (191)	0.04 (262)	0.02 (211)	0.06 (38)	0.53 (9)	Insufficient
Reported Deaths	0.30 (8)	0.33 (69)	0.29 (129)	0.35 (98)	0.25 (140)	0.41 (111)	0.89 (19)	Unknown	Insufficient
Reported Deaths per 100000	0.85 (8)	0.05 (69)	0.04 (129)	0.09 (98)	0.05 (140)	0.02 (111)	0.71 (19)	Unknown	Insufficient
Residential electricity consumption- per person (kWh)	0.28 (29)	0.11 (231)	0.00 (477)	0.02 (548)	0.01 (692)	0.04 (774)	0.02 (694)	0.01 (406)	0.11 (77)
Residential electricity consumption- total (kWh)	0.37 (29)	0.44 (231)	0.47 (477)	0.37 (548)	0.34 (692)	0.29 (774)	0.22 (694)	0.09 (406)	0.08 (77)

Indicator	1	2	3	4	5	6	7	8	9
Road traffic total deaths	0.51 (3)	0.39 (29)	0.17 (44)	0.27 (46)	0.26 (86)	0.33 (132)	0.29 (181)	0.33 (206)	0.22 (41)
Roads- paved (% of total roads)	0.24 (22)	0.29 (67)	0.14 (141)	0.49 (157)	0.17 (212)	0.02 (306)	0.20 (286)	0.18 (220)	0.16 (20)
RTI 0-14 all age adj	0.23 (15)	0.16 (93)	0.10 (171)	0.13 (202)	0.15 (277)	0.06 (458)	0.03 (520)	0.11 (302)	0.05 (45)
RTI 15-29 all age adj	0.31 (15)	0.24 (93)	0.15 (171)	0.05 (202)	0.07 (277)	0.03 (458)	0.05 (520)	0.10 (302)	0.40 (45)
RTI 30-44 all age adj	0.59 (15)	0.08 (93)	0.12 (171)	0.14 (202)	0.11 (277)	0.04 (458)	0.01 (520)	0.11 (302)	0.13 (45)
RTI 45-59 all age adj	0.34 (15)	0.10 (93)	0.03 (171)	0.09 (202)	0.02 (277)	0.04 (458)	0.05 (520)	0.04 (302)	0.29 (45)
RTI 60+ all age adj	0.30 (15)	0.11 (93)	0.06 (171)	0.07 (202)	0.22 (277)	0.00 (458)	0.01 (520)	0.08 (302)	0.16 (45)
SBP female (mm Hg)- age standardized mean	0.09 (72)	0.13 (283)	0.08 (398)	0.04 (442)	0.08 (572)	0.08 (694)	0.13 (635)	0.07 (404)	0.05 (76)
SBP male (mm Hg)- age standardized mean	0.03 (72)	0.07 (283)	0.09 (398)	0.09 (442)	0.15 (572)	0.10 (694)	0.09 (635)	0.11 (404)	0.14 (76)
Services- etc.- value added (% of GDP)	0.01 (164)	0.10 (583)	0.01 (657)	0.00 (530)	0.01 (659)	0.02 (777)	0.06 (625)	0.05 (377)	0.22 (64)
Stillbirth rate	0.98 (3)	0.20 (16)	0.06 (42)	0.45 (33)	0.07 (32)	0.08 (39)	0.54 (60)	0.08 (32)	Insufficient
Stomach female cases	Insufficient	0.26 (9)	0.33 (21)	0.46 (11)	0.32 (23)	0.43 (30)	0.55 (17)	0.35 (21)	Insufficient
Stomach female deaths	Insufficient	0.22 (9)	0.55 (21)	0.51 (11)	0.24 (23)	0.24 (30)	0.45 (17)	0.28 (21)	Insufficient
Stomach Female Incidence	Insufficient	0.52 (13)	0.23 (50)	0.58 (39)	0.19 (51)	0.26 (71)	0.51 (122)	0.45 (75)	Insufficient
Stomach Female Mortality	0.34 (20)	0.31 (127)	0.33 (217)	0.46 (270)	0.54 (338)	0.54 (495)	0.62 (504)	0.61 (226)	0.30 (10)
Stomach Male cases	Insufficient	0.54 (9)	0.28 (21)	0.48 (11)	0.30 (23)	0.19 (30)	0.45 (17)	0.32 (21)	Insufficient
Stomach male deaths	Insufficient	0.50 (9)	0.29 (21)	0.50 (11)	0.33 (23)	0.40 (30)	0.20 (17)	0.24 (21)	Insufficient
Stomach Male Incidence	Insufficient	0.71 (13)	0.42 (50)	0.11 (39)	0.28 (51)	0.20 (71)	0.37 (122)	0.40 (75)	Insufficient
Stomach Male Mortality	0.14 (20)	0.22 (127)	0.30 (217)	0.33 (270)	0.49 (338)	0.48 (495)	0.50 (504)	0.55 (226)	0.73 (10)
Storm affected	0.43 (74)	0.15 (366)	0.14 (415)	0.10 (434)	0.11 (580)	0.12 (725)	0.21 (595)	0.12 (352)	0.24 (68)
Storm killed	0.77 (74)	0.29 (366)	0.30 (415)	0.32 (434)	0.31 (580)	0.38 (725)	0.43 (595)	0.33 (352)	0.58 (68)
Suicide 0-14 all age adj	0.43 (15)	0.21 (90)	0.07 (171)	0.14 (202)	0.12 (278)	0.05 (458)	0.01 (518)	0.08 (302)	0.42 (45)
Suicide 15-29 all age adj	0.36 (15)	0.11 (90)	0.09 (171)	0.06 (202)	0.05 (278)	0.01 (458)	0.04 (518)	0.03 (302)	0.12 (45)
Suicide 30-44 all age adj	0.28 (15)	0.17 (90)	0.04 (171)	0.06 (202)	0.05 (278)	0.02 (458)	0.02 (518)	0.06 (302)	0.28 (45)
Suicide 45-59 all age adj	0.51 (15)	0.34 (90)	0.17 (171)	0.06 (202)	0.15 (278)	0.06 (458)	0.01 (518)	0.02 (302)	0.17 (45)
Suicide 60+ all age adj	0.21 (15)	0.08 (90)	0.04 (171)	0.07 (202)	0.02 (278)	0.06 (458)	0.00 (518)	0.04 (302)	0.09 (45)
Suicide among men- per 100 000- age adjusted	0.34 (16)	0.37 (101)	0.22 (186)	0.04 (216)	0.01 (289)	0.04 (461)	0.01 (493)	0.10 (244)	0.24 (13)
Suicide women age adjusted	0.22 (16)	0.03 (101)	0.06 (185)	0.04 (216)	0.13 (288)	0.05 (459)	0.09 (489)	0.16 (235)	0.34 (13)
Suicide- age adjusted- per 100 000 standard population	0.42 (18)	0.04 (122)	0.02 (221)	0.07 (251)	0.01 (325)	0.07 (515)	0.12 (525)	0.13 (277)	0.64 (15)
Suicides- total deaths	Insufficient	0.42 (20)	0.13 (36)	0.50 (25)	0.22 (45)	0.17 (63)	0.35 (36)	0.15 (42)	0.54 (3)
Surface area (sq. km)	0.18 (207)	0.15 (696)	0.15 (806)	0.06 (752)	0.22 (810)	0.15 (872)	0.07 (712)	0.09 (413)	0.04 (81)
Tax revenue (% of GDP)	0.64 (5)	0.15 (59)	0.21 (93)	0.07 (162)	0.04 (187)	0.03 (252)	0.06 (222)	0.06 (253)	0.19 (53)

Indicator	1	2	3	4	5	6	7	8	9
TB incidence- all forms (per 100 000 population per year)	0.53 (39)	0.65 (142)	0.43 (260)	0.62 (258)	0.42 (358)	0.49 (479)	0.79 (363)	0.53 (297)	0.24 (41)
TB incidence- all forms (per year)	Insufficient	Insufficient	Insufficient	0.22 (19)	0.35 (43)	0.52 (167)	0.59 (151)	0.55 (139)	0.47 (19)
TB incidence- all forms in HIV+ (per 100 000 population per year)	0.29 (39)	0.44 (142)	0.32 (260)	0.20 (260)	0.20 (344)	0.32 (455)	0.37 (350)	0.30 (291)	0.42 (39)
TB incidence- all forms in HIV+ (per year)	0.71 (11)	0.65 (8)	0.49 (107)	0.59 (103)	0.37 (266)	0.38 (370)	0.46 (325)	0.41 (282)	0.45 (39)
TB incidence- smear-positive (per 100 000 population per year)	0.60 (39)	0.68 (142)	0.63 (260)	0.59 (262)	0.57 (359)	0.53 (479)	0.81 (362)	0.52 (297)	0.26 (40)
TB incidence- smear-positive (per year)	Insufficient	Insufficient	Insufficient	0.37 (19)	0.45 (60)	0.42 (202)	0.58 (193)	0.50 (210)	0.46 (35)
TB mortality- all forms (per 100 000 population per year)	0.44 (39)	0.61 (142)	0.56 (260)	0.57 (262)	0.48 (359)	0.37 (479)	0.71 (362)	0.44 (297)	0.55 (40)
TB mortality- all forms (per year)	Insufficient	0.48 (3)	0.55 (21)	0.43 (50)	0.52 (186)	0.49 (290)	0.46 (276)	0.45 (249)	0.67 (38)
TB mortality- all forms in HIV+ (per 100 000 population per year)	0.47 (39)	0.53 (142)	0.35 (259)	0.24 (252)	0.18 (335)	0.23 (408)	0.32 (300)	0.31 (284)	0.69 (39)
TB mortality- all forms in HIV+ (per year)	0.48 (17)	0.32 (27)	0.49 (129)	0.51 (128)	0.31 (284)	0.26 (374)	0.34 (294)	0.37 (283)	0.62 (39)
TB prevalence- all forms (per 100 000 population per year)	0.25 (39)	0.52 (142)	0.60 (258)	0.54 (261)	0.54 (359)	0.62 (479)	0.70 (362)	0.45 (297)	0.34 (40)
TB prevalence- all forms (per year)	Insufficient	Insufficient	Insufficient	0.25 (11)	0.47 (32)	0.50 (143)	0.57 (144)	0.51 (152)	0.37 (22)
TB prevalence- all forms in HIV+ (per 100 000 population per year)	0.47 (39)	0.46 (142)	0.32 (260)	0.18 (260)	0.17 (349)	0.29 (458)	0.35 (352)	0.26 (291)	0.40 (39)
TB prevalence- all forms in HIV+ (per year)	0.64 (17)	0.39 (22)	0.54 (129)	0.61 (122)	0.37 (281)	0.32 (407)	0.43 (344)	0.36 (290)	0.39 (39)
TC female (mmol/L)- age standardized mean	0.04 (72)	0.03 (283)	0.05 (398)	0.02 (442)	0.10 (572)	0.03 (694)	0.02 (635)	0.11 (404)	0.10 (76)
TC male (mmol/L)- age standardized mean	0.15 (72)	0.02 (283)	0.03 (398)	0.02 (442)	0.04 (572)	0.02 (694)	0.09 (635)	0.06 (404)	0.04 (76)
Total 0-4 years (%)	0.06 (114)	0.04 (229)	0.12 (222)	0.02 (193)	0.05 (179)	0.07 (226)	0.11 (172)	0.13 (118)	0.20 (9)
Total 10-14 years (%)	0.09 (114)	0.04 (229)	0.25 (222)	0.15 (193)	0.07 (179)	0.04 (226)	0.06 (172)	0.19 (118)	0.62 (9)
Total 15-19 years (%)	0.08 (114)	0.06 (229)	0.10 (222)	0.14 (193)	0.04 (179)	0.04 (226)	0.17 (172)	0.13 (118)	0.16 (9)
Total 15-24 employment to population (%)	0.53 (36)	0.45 (147)	0.58 (254)	0.52 (258)	0.62 (370)	0.62 (449)	0.60 (391)	0.64 (319)	0.53 (45)
Total 15-24 unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.62 (28)	0.55 (30)	0.70 (199)	0.68 (205)	0.41 (13)
Total 15-64 labour to population (%)	0.48 (71)	0.51 (278)	0.58 (386)	0.60 (417)	0.62 (561)	0.58 (667)	0.62 (608)	0.62 (367)	0.52 (45)
Total 15+ labour to population (%)	0.48 (71)	0.47 (278)	0.61 (386)	0.58 (417)	0.60 (561)	0.54 (667)	0.66 (608)	0.61 (367)	0.58 (45)
Total 15+ unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.64 (28)	0.63 (30)	0.69 (199)	0.75 (205)	0.68 (13)
Total 20-39 years (%)	0.13 (114)	0.02 (229)	0.10 (222)	0.12 (193)	0.25 (179)	0.02 (226)	0.07 (172)	0.13 (118)	0.48 (9)
Total 25-54 labour to population (%)	0.55 (71)	0.55 (278)	0.60 (386)	0.67 (417)	0.63 (561)	0.68 (667)	0.67 (608)	0.63 (367)	0.60 (45)
Total 25-54 unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.71 (29)	0.64 (38)	0.63 (200)	0.70 (205)	0.71 (13)

Indicator	1	2	3	4	5	6	7	8	9
Total 40-59 years (%)	0.11 (114)	0.01 (229)	0.05 (222)	0.04 (193)	0.05 (179)	0.15 (226)	0.08 (172)	0.04 (118)	0.23 (9)
Total 5-9 years (%)	0.31 (114)	0.03 (229)	0.03 (222)	0.14 (193)	0.14 (179)	0.04 (226)	0.04 (172)	0.11 (118)	0.51 (9)
Total 55+ unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.64 (29)	0.65 (38)	0.69 (200)	0.72 (205)	0.59 (13)
Total 65+ labour to population (%)	0.45 (71)	0.56 (278)	0.54 (386)	0.57 (417)	0.63 (561)	0.66 (667)	0.71 (608)	0.69 (367)	0.66 (45)
Total above 15 employment to population (%)	0.52 (36)	0.52 (147)	0.49 (254)	0.58 (258)	0.63 (370)	0.56 (449)	0.65 (391)	0.66 (319)	0.63 (45)
Total above 60 (%)	0.05 (114)	0.06 (229)	0.08 (222)	0.15 (193)	0.07 (179)	0.02 (226)	0.13 (172)	0.02 (118)	0.12 (9)
Total above 60- number	0.36 (114)	0.42 (229)	0.39 (222)	0.40 (193)	0.26 (179)	0.31 (226)	0.29 (172)	0.24 (118)	0.46 (9)
Total agriculture workers (%)	Insufficient	0.41 (10)	0.18 (46)	0.51 (113)	0.51 (258)	0.64 (398)	0.70 (481)	0.62 (333)	0.66 (42)
Total allocable aid (2007 US$)	Insufficient	Insufficient	Insufficient	0.39 (12)	0.25 (36)	0.35 (83)	0.13 (284)	0.02 (272)	0.31 (34)
Total CO2 emissions from fossil-fuels (metric tons)	0.32 (1035)	0.31 (1403)	0.37 (1155)	0.29 (795)	0.27 (795)	0.18 (773)	0.18 (654)	0.09 (343)	0.49 (22)
Total contributing family workers (%)	Insufficient	0.34 (8)	0.35 (25)	0.46 (41)	0.62 (156)	0.69 (297)	0.70 (426)	0.50 (326)	0.65 (44)
Total expenditure on health as percentage of GDP (gross domestic product)	0.69 (22)	0.63 (102)	0.66 (198)	0.65 (173)	0.62 (271)	0.73 (343)	0.69 (272)	0.54 (252)	0.45 (21)
Total fertility rate	0.07 (92)	0.14 (201)	0.28 (204)	0.17 (182)	0.23 (170)	0.23 (174)	0.17 (148)	0.38 (87)	0.33 (32)
Total GDP (PPP 2005 intl.D)	0.00 (1317)	0.00 (1646)	0.00 (1281)	0.00 (879)	0.00 (829)	0.00 (873)	0.00 (712)	0.03 (413)	0.01 (81)
Total industry workers (%)	Insufficient	0.37 (10)	0.42 (46)	0.54 (113)	0.67 (258)	0.67 (403)	0.61 (482)	0.60 (333)	0.47 (42)
Total long-term unemployment (%)	Insufficient	Insufficient	Insufficient	Insufficient	0.88 (23)	0.67 (120)	0.72 (277)	0.74 (292)	0.63 (37)
Total number of billionaires	Unknown	Unknown	Unknown	0.92 (84)	0.76 (67)	0.50 (130)	0.54 (101)	0.50 (122)	0.36 (39)
Total number of deaths from interpersonal violence	Insufficient	0.33 (20)	0.43 (36)	0.40 (25)	0.25 (45)	0.23 (62)	0.36 (36)	0.32 (42)	0.77 (3)
Total population both sexes	0.00 (481)	0.08 (1048)	0.04 (1041)	0.05 (872)	0.01 (840)	0.06 (909)	0.01 (745)	0.10 (448)	0.06 (85)
Total population female	0.01 (481)	0.01 (1048)	0.01 (1041)	0.01 (872)	0.02 (840)	0.05 (909)	0.01 (745)	0.03 (441)	0.15 (82)
Total population male	0.04 (481)	0.00 (1048)	0.02 (1041)	0.03 (872)	0.08 (840)	0.01 (909)	0.01 (745)	0.13 (441)	0.11 (82)
Total reserves (% of total external debt)	0.07 (103)	0.01 (406)	0.06 (554)	0.03 (514)	0.02 (560)	0.06 (509)	0.10 (138)	0.13 (34)	0.69 (10)
Total salaried employees (%)	Insufficient	0.25 (9)	0.54 (25)	0.45 (50)	0.50 (177)	0.59 (319)	0.63 (458)	0.64 (331)	0.60 (44)
Total self-employed (%)	Insufficient	0.56 (7)	0.46 (25)	0.49 (49)	0.59 (174)	0.60 (313)	0.62 (444)	0.71 (306)	0.59 (41)
Total service workers (%)	Insufficient	0.24 (10)	0.46 (46)	0.49 (113)	0.61 (258)	0.66 (403)	0.62 (482)	0.65 (333)	0.61 (42)
Total sex ratio	0.19 (114)	0.19 (229)	0.15 (222)	0.21 (193)	0.17 (179)	0.15 (226)	0.12 (172)	0.25 (118)	0.45 (9)

Indicator	1	2	3	4	5	6	7	8	9
Total water withdrawal (summed by sector) (10^9 m3/yr)	0.78 (4)	0.27 (16)	0.23 (41)	0.16 (35)	0.14 (52)	0.25 (49)	0.33 (44)	0.49 (31)	Insufficient
Total water withdrawal per capita (m3/inhab/yr)	0.80 (4)	0.40 (16)	0.46 (41)	0.26 (35)	0.27 (52)	0.26 (49)	0.13 (44)	0.27 (31)	Insufficient
Trade balance (% of GDP)	0.22 (183)	0.03 (663)	0.02 (789)	0.00 (714)	0.03 (782)	0.06 (829)	0.00 (704)	0.07 (403)	0.06 (74)
Trade balance (current US$)	0.01 (177)	0.00 (634)	0.01 (778)	0.00 (674)	0.01 (742)	0.05 (775)	0.03 (671)	0.03 (377)	0.05 (69)
Traffic mortality men- per 100-000- age adjusted	0.67 (16)	0.24 (104)	0.06 (186)	0.04 (216)	0.17 (288)	0.06 (459)	0.04 (492)	0.03 (237)	0.15 (13)
Traffic mortality per 100-000- age adjusted	0.28 (18)	0.10 (116)	0.05 (208)	0.03 (246)	0.21 (320)	0.02 (518)	0.03 (546)	0.03 (322)	0.21 (41)
Traffic mortality women- per 100-000- age adjusted	0.47 (16)	0.11 (103)	0.02 (186)	0.08 (216)	0.04 (287)	0.03 (459)	0.03 (493)	0.09 (237)	0.40 (13)
Tsunami affected	Insufficient	Insufficient	0.51 (5)	1.00 (4)	0.81 (5)	0.70 (3)	Insufficient	Insufficient	Insufficient
Tsunami killed	Insufficient	Insufficient	0.58 (5)	0.55 (4)	0.99 (4)	0.60 (3)	Insufficient	Insufficient	Insufficient
Under 5 mortality rate from CMEinfo	0.33 (273)	0.29 (820)	0.38 (910)	0.51 (793)	0.29 (811)	0.36 (865)	0.52 (693)	0.64 (407)	0.63 (79)
Under-five mortality rate	0.06 (832)	0.00 (1236)	0.25 (1101)	0.12 (852)	0.13 (822)	0.23 (866)	0.51 (693)	0.53 (408)	0.33 (79)
Urban population	0.01 (223)	0.07 (727)	0.01 (831)	0.02 (766)	0.02 (813)	0.02 (873)	0.01 (712)	0.12 (413)	0.04 (81)
Urban population (% of total)	0.53 (223)	0.60 (727)	0.56 (831)	0.57 (766)	0.51 (813)	0.47 (873)	0.38 (712)	0.42 (413)	0.28 (81)
Urban population growth (annual %)	0.06 (223)	0.02 (726)	0.05 (831)	0.02 (766)	0.00 (811)	0.05 (870)	0.02 (708)	0.06 (408)	0.01 (79)
War- age-adjusted mortality due to	Insufficient	0.29 (20)	0.27 (36)	0.23 (25)	0.22 (45)	0.11 (63)	0.30 (36)	0.17 (42)	Unknown
Water and sanitation aid (% of total aid)	Insufficient	Insufficient	Insufficient	Insufficient	0.48 (7)	0.04 (43)	0.08 (257)	0.03 (265)	0.09 (34)
Water resources: total internal renewable per capita (m3/inhab/yr)	0.34 (46)	0.12 (142)	0.12 (171)	0.12 (151)	0.05 (165)	0.11 (159)	0.01 (139)	0.13 (81)	0.09 (26)
Water resources: total renewable per capita (actual) (m3/inhab/yr)	0.21 (46)	0.13 (142)	0.01 (171)	0.08 (151)	0.10 (166)	0.09 (160)	0.10 (142)	0.23 (82)	0.28 (26)
Whole country all new case detection rate (%)	0.85 (22)	0.66 (99)	0.57 (185)	0.67 (182)	0.62 (253)	0.60 (347)	0.61 (246)	0.53 (257)	0.62 (40)
Whole country new smear-positive case detection rate (%)	0.68 (27)	0.72 (108)	0.64 (205)	0.65 (209)	0.60 (288)	0.53 (382)	0.70 (273)	0.58 (263)	0.56 (40)
Wood products removal (m3)	Insufficient	Insufficient	0.61 (7)	0.70 (7)	0.37 (24)	0.43 (43)	0.86 (11)	0.40 (6)	Insufficient
Working hours per week	Insufficient	Insufficient	0.81 (3)	0.92 (3)	0.50 (13)	0.16 (68)	0.30 (302)	0.10 (303)	0.22 (34)
Youth literacy rate (%). Female	0.74 (6)	0.15 (30)	0.23 (37)	0.25 (39)	0.39 (54)	0.20 (91)	0.28 (54)	0.45 (25)	0.45 (7)
Youth literacy rate (%). Male	0.67 (6)	0.21 (30)	0.12 (37)	0.09 (39)	0.07 (54)	0.02 (91)	0.11 (54)	0.23 (25)	0.49 (7)
Youth literacy rate (%). Total	0.57 (6)	0.47 (31)	0.53 (37)	0.20 (39)	0.08 (54)	0.14 (91)	0.41 (54)	0.27 (25)	0.30 (7)

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